EXHIBIT 41

FEBRUARY 3, 2022

What the data says about gun deaths in the U.S.

BY JOHN GRAMLICH

More Americans died of gun-related injuries in 2020 than in any other year on record, according to recently published statistics from the Centers for Disease Control and Prevention (CDC). That included a record number of gun murders, as well as a near-record number of gun suicides. Despite the increase in such fatalities, the *rate* of gun deaths – a statistic that accounts for the nation's growing population – remains below the levels of earlier years.

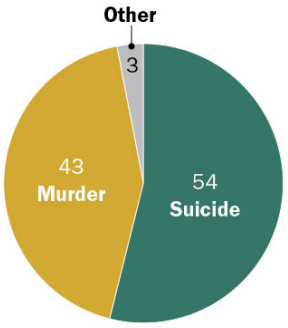
Here's a closer look at gun deaths in the United States, based on a Pew Research Center analysis of data from the CDC, the FBI and other sources. You can also read key public opinion findings about U.S. gun violence and gun policy in our recent roundup.

How we did this ⊕

How many people die from gun-related injuries in the U.S. each year?

Suicides accounted for more than half of U.S. gun deaths in 2020

% of U.S. gun deaths, by type



Note: "Other" includes gun deaths that were unintentional, involved law enforcement or had undetermined circumstances.
Source: Centers for Disease Control and Prevention.

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In 2020, the most recent year for which complete data is available, 45,222 people died from gun-related injuries in the U.S., according to the CDC. That figure includes gun murders and gun suicides, along with three other, less common types of gun-related deaths tracked by the CDC: those that were unintentional, those that involved law enforcement and those whose circumstances could not be determined. The total *excludes* deaths in which gunshot injuries played a contributing, but not principal, role. (CDC fatality statistics are based on information contained in official death certificates, which identify a single cause of death.)

What share of U.S. gun deaths are murders and what share are suicides?

Though they tend to get less public attention than gun-related murders, suicides have long accounted for the majority of U.S. gun deaths. In 2020, 54% of all gun-related deaths in the U.S. were suicides (24,292), while 43% were murders (19,384), according to the CDC. The remaining gun deaths that year were unintentional (535), involved law enforcement (611) or had undetermined circumstances (400).

What share of *all* murders and suicides in the U.S. involve a gun?

Nearly eight-in-ten (79%) U.S. murders in 2020 – 19,384 out of 24,576 – involved a firearm. That marked the highest percentage since at least 1968, the earliest year for which the CDC has online records. A little over half (53%) of all suicides in 2020 – 24,292 out of 45,979 – involved a gun, a percentage that has generally remained stable in recent years.

How has the number of U.S. gun deaths changed over time?

The 45,222 total gun deaths in 2020 were by far the most on record, representing a 14% increase from the year before, a 25% increase from five years earlier and a 43% increase from a decade prior.

Gun murders, in particular, have climbed sharply in recent years. The 19,384 gun murders that took place in 2020 were the most since at least 1968, exceeding the previous peak of 18,253 recorded by the CDC in 1993. The 2020 total represented a 34% increase from the year before, a 49% increase over five years and a 75% increase over 10 years.

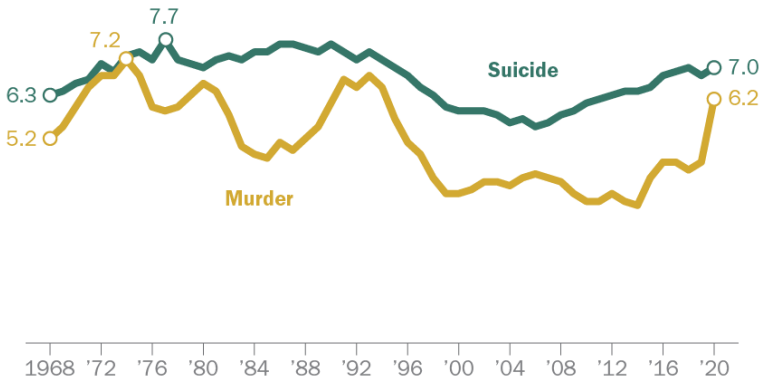
The number of gun suicides has also risen in recent years – climbing 10% over five years and 25% over 10 years – and is near its highest point on record. The 24,292 gun suicides that took place in 2020 were the most in any year except 2018, when there were 24,432.

How has the *rate* of U.S. gun deaths changed over time?

While 2020 saw the highest total *number* of gun deaths in the U.S., this statistic does not take into account the nation's growing population. On a per capita basis, there were 13.6 gun deaths per 100,000 people in 2020 – the highest rate since the mid-1990s, but still well below the peak of 16.3 gun deaths per 100,000 people in 1974.

U.S. gun suicide and gun murder rates have increased in recent years, but remain below past highs

Gun deaths per 100,000 people (age-adjusted), by type



Note: Gun murders and suicides between 1968 and 1978 are classified by the CDC as involving firearms and explosives; those between 1979 and 2020 include firearms only.
Source: Centers for Disease Control and Prevention.

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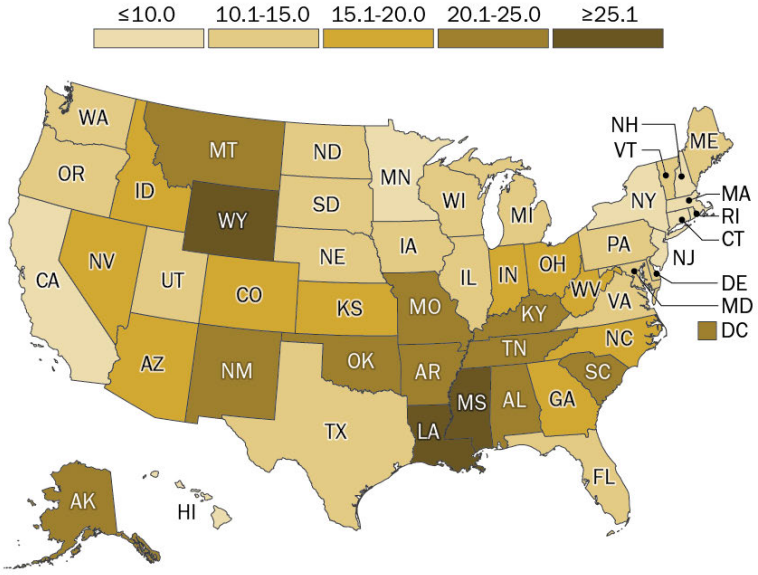
The gun murder and gun suicide rates in the U.S. both remain below their peak levels. There were 6.2 gun murders per 100,000 people in 2020, below the rate of 7.2 recorded in 1974. And there were 7.0 gun suicides per 100,000 people in 2020, below the rate of 7.7 measured in 1977. (One caveat when considering the 1970s figures: In the CDC's database, gun murders and gun suicides between 1968 and 1978 are classified as those caused by firearms *and* explosives. In subsequent years, they are classified as deaths involving firearms only.)

Which states have the highest and lowest gun death rates in the U.S.?

U.S. gun death rates varied widely by state in 2020

Gun deaths per 100,000 people (age-adjusted), by state



Note: Includes gun murders, suicides and deaths that were unintentional, involved law enforcement or had undetermined circumstances.
Source: Centers for Disease Control and Prevention.

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The rate of gun fatalities varies widely from state to state. In 2020, the states with the highest rates of gun-related deaths – counting murders, suicides and all other categories tracked by the CDC – included Mississippi (28.6 per 100,000 people), Louisiana (26.3), Wyoming (25.9), Missouri (23.9) and Alabama (23.6). The states with the lowest rates included New York (5.3), Rhode Island (5.1), New Jersey (5.0), Massachusetts (3.7) and Hawaii (3.4).

How does the gun death rate in the U.S. compare with other countries?

The gun death rate in the U.S. is much higher than in most other nations, particularly developed nations. But it is still far below the rates in several Latin American countries, according to a 2018 study of 195 countries and territories by researchers at the Institute for Health Metrics and Evaluation at the University of Washington.

The U.S. gun death rate was 10.6 per 100,000 people in 2016, the most recent year in the study, which used a somewhat different methodology from the CDC. That was far higher than in countries such as Canada (2.1 per 100,000) and Australia (1.0), as well as European nations such as France (2.7), Germany (0.9) and Spain (0.6). But the rate in the U.S. was much lower than in El Salvador (39.2 per 100,000 people), Venezuela (38.7), Guatemala (32.3), Colombia (25.9) and Honduras (22.5), the study found. Overall, the U.S. ranked 20th in its gun fatality rate that year.

How many people are killed in mass shootings in the U.S. every year?

This is a difficult question to answer because there is no single, agreed-upon definition of the term "mass shooting." Definitions can vary depending on factors including the number of victims and the circumstances of the shooting.

The FBI collects data on "active shooter incidents," which it defines as "one or more individuals actively engaged in killing or attempting to kill people in a populated area." Using the FBI's definition, 38 people – excluding the shooters – died in such incidents in 2020.

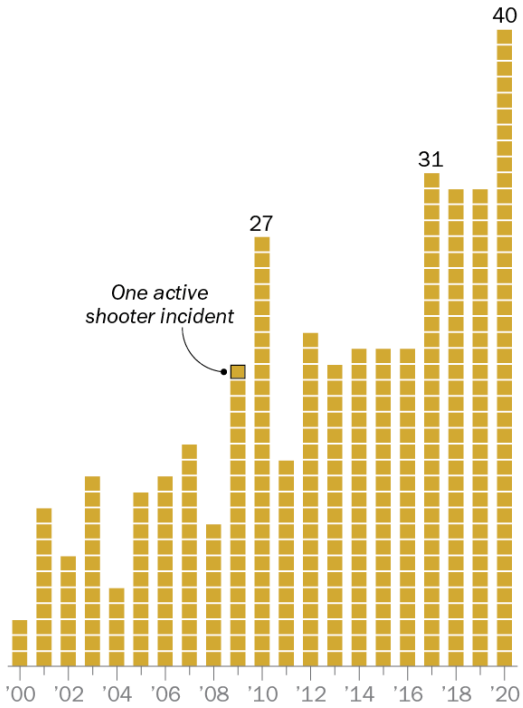
The Gun Violence Archive, an online database of gun violence incidents in the U.S., defines mass shootings as incidents in which four or more people are shot, even if no one was killed (again excluding the shooters). Using this definition, 513 people died in these incidents in 2020.

Regardless of the definition being used, fatalities in mass shooting incidents in the U.S. account for a small fraction of all gun murders that occur nationwide each year.

How has the number of mass shootings in the U.S. changed over time?

Active shooter incidents have become more common in U.S. in recent years

Number of active shooter incidents, by year



Note: "Active shooter incidents" are defined by the FBI as "one or more individuals actively engaged in killing or attempting to kill people in a populated area."
Source: Federal Bureau of Investigation.

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The same definitional issue that makes it challenging to arrive at an exact number of mass shooting fatalities comes into play when trying to determine the frequency of U.S. mass shootings over time. The unpredictability of these incidents also complicates matters: As Rand Corp. noted in a research brief, "Chance variability in the annual number of mass shooting incidents makes it challenging to discern a clear trend, and trend estimates will be sensitive to outliers and to the time frame chosen for analysis."

The FBI found an increase in active shooter incidents between 2000 and 2020. There were three such incidents in 2000; by 2020, that figure had increased to 40.

Which types of firearms are most commonly used in gun murders in the U.S.?

In 2020, handguns were involved in 59% of the 13,620 U.S. gun murders and non-negligent manslaughters for which data is available, according to the FBI. Rifles – the category that includes guns sometimes referred to as "assault weapons" – were involved in 3% of firearm murders. Shotguns were involved in 1%. The remainder of gun homicides and non-negligent manslaughters (36%) involved other kinds of firearms or those classified as "type not stated."

It's important to note that the FBI's statistics do not capture the details on *all* gun murders in the U.S. each year. The FBI's data is based on information voluntarily submitted by police departments around the country, and not all agencies participate or provide complete information each year.

Note: This is an update of a post originally published on Aug. 16, 2019.

Topics Political Issues, Gun Policy

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12

America's Experience with the Federal Assault Weapons Ban, 1994–2004

Key Findings and Implications

Christopher S. Koper

In 1994, the federal government imposed a ten-year ban on military-style semi-automatic firearms and ammunition-feeding devices holding more than ten rounds of ammunition. This legislation, commonly known as the federal assault weapons ban, was intended in the broadest sense to reduce gunshot victimizations by limiting the national stock of semi-automatic firearms with large ammunition capacities and other features conducive to criminal uses. Reflecting America's general political divisions over the issue of gun control, the debate over the law was highly contentious. Ten years later, Congress allowed the ban to expire.

More recently, there have been growing calls for a reexamination of the assault weapons issue. This debate has been fueled by a series of mass shooting incidents involving previously banned firearms or magazines. Since 2007, for example, there have been at least 11 incidents in which offenders using

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assault weapons or other semi-automatics with magazines larger than 10 rounds have wounded or killed eight or more people (Violence Policy Center 2012). Some of the most notorious of these incidents have been a 2007 shooting on the college campus of Virginia Tech that left 33 dead and 17 wounded; a 2011 shooting in an Arizona parking lot that killed 6 and wounded 13, including Congresswoman Gabrielle Giffords; a 2012 shooting in an Aurora, Colorado, movie theatre that left 12 dead and 58 wounded; and, most recently, a shooting in a Newtown, Connecticut, elementary school that left 26 victims dead, 20 of whom were children (an additional victim was killed elsewhere).

To help inform the new dialogue on this issue, this essay examines America's experience with the 1994 assault weapons law. During the course of the ban, the National Institute of Justice (NIJ) funded a series of studies on the law's impacts for the U.S. Department of Justice and the U.S. Congress (Koper 2004; Koper and Roth 2001, 2002; Roth and Koper 1997, 1999). I present highlights from those studies, with an emphasis on findings from the final evaluation reported in 2004 (Koper 2004). These studies sought to assess the law's impacts on (1) the availability of assault weapons (AWs) and large-capacity magazines (LCMs) as measured by price and production (or importation) indices in legal markets; (2) trends in criminal uses of AWs and LCMs; and (3) trends in the types of gun crimes that seemed most likely to be affected by changes in the use of AWs and LCMs. (The latter two issues are emphasized in this summary.) Finally, the research team examined studies of gun attacks more generally in order to estimate the ban's potential to produce longer-term reductions in shootings.

In summary, the ban had mixed effects in reducing crimes with the banned weaponry because of various exemptions and loopholes in the legislation. The ban did not appear to affect gun crime during the time it was in effect, but some evidence suggests it may have modestly reduced gunshot victimizations had it remained in place for a longer period. The ban's most important provision was arguably its prohibition on ammunition magazines holding more than 10 rounds. Policymakers considering a new version of the ban might particularly focus on this aspect of the previous legislation and reconsider the exemptions and loopholes that undermined the effectiveness of the original ban.

Provisions of the Assault Weapons Ban

Enacted on September 13, 1994, Title XI, Subtitle A of the Violent Crime Control and Law Enforcement Act of 1994 imposed a ten-year ban on the "manufacture, transfer, and possession" of certain semi-automatic firearms designated as assault weapons. The AW ban did not prohibit all semi-automatics; rather, it was directed at semi-automatics having features that appear to be useful in military and criminal applications but unnecessary in shooting sports or self-defense. Examples of such features include pistol grips on rifles, flash hiders, folding rifle stocks, threaded barrels for attaching silencers, and the ability to accept ammunition magazines holding large numbers of bullets. The law specifically prohibited 18 models and variations by name (e.g., the Intratec TEC-9 pistol and the Colt AR-15 rifle), as well as revolving cylinder shotguns (see Koper 2004, 5). This list included a number of foreign rifles that the federal government had banned from importation into the country beginning in 1989 (e.g., Avtomat Kalashnikov models). In addition, the ban contained a generic "features test" provision that generally prohibited other semi-automatic firearms having two or more military-style features, as described in Table 12.1. In total, the federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) identified 118 model and caliber variations that met the AW criteria established by the ban.

The law also banned "copies or duplicates" of the named gun makes and models, but federal authorities emphasized exact copies. Relatively cosmetic changes, such as removing a flash hider or bayonet mount, were thus sufficient to transform a banned weapon into a legal substitute. In this sense, the law is perhaps best understood not as a gun ban but as a law that restricted weapon accessories. A number of gun manufacturers began producing modified, legal versions of some of the banned guns, though not all of these substitute weapons proved as popular as the banned versions.[1] In other respects (e.g., type of firing mechanism, ammunition fired, and the ability to accept a detachable magazine), the banned AWs did not differ from other legal semi-automatic weapons.

The other major component of the assault weapons legislation was a ban on most ammunition-feeding devices holding more than 10 rounds of ammunition (referred to as large-capacity magazines).[2] The LCM ban was arguably the most important part of the assault weapons law for two reasons. First, an LCM is the most functionally important feature of an AW-type firearm. As noted by the U.S. House of Representatives, most prohibited AWs came equipped with magazines holding 30 rounds and could accept magazines holding as

Table 12.1 Features test of the federal assault weapons ban

Weapon category	Military-style features (2 or more qualified a firearm as an assault weapon)
Semi-automatic pistols accepting detachable magazines	1) ammunition magazine that attaches outside the pistol grip 2) threaded barrel capable of accepting a barrel extender, flash hider, forward handgrip, or silencer 3) heat shroud attached to or encircling the barrel 4) weight of more than 50 ounces unloaded 5) semiautomatic version of a fully automatic weapon
Semi-automatic rifles accepting detachable magazines	1) folding or telescoping stock 2) pistol grip that protrudes beneath the firing action 3) bayonet mount 4) flash hider or a threaded barrel designed to accommodate one 5) grenade launcher
Semi-automatic shotguns	1) folding or telescoping stock 2) pistol grip that protrudes beneath the firing action 3) fixed magazine capacity over 5 rounds 4) ability to accept a detachable ammunition magazine

many as 50 or 100 rounds (United States Department of the Treasury 1998, 14). Removing LCMs from these weapons thus greatly limits their firepower.

Second, the reach of the LCM ban was much broader than that of the AW ban because many semi-automatics that were not banned by the AW provision could accept LCMs. Approximately 40 percent of the semi-automatic handgun models and a majority of the semi-automatic rifle models that were being manufactured and advertised prior to the ban were sold with LCMs or had a variation that was sold with an LCM (calculated from Murtz and the Editors of Gun Digest 1994). Still others could accept LCMs made for other firearms and/or by other manufacturers. A national survey of gun owners in 1994 found that 18% of all civilian-owned firearms and 21% of civilian-owned handguns were equipped with magazines having 10 or more rounds (Cook and Ludwig 1996, 17). The AW provision did not affect most LCM-compatible guns, but the LCM provision limited the capacities of their magazines to 10 rounds.

The AW ban also contained important exemptions. AWs and LCMs manufactured before the effective date of the ban were "grandfathered" and thus legal to own and transfer. Though not precise, estimates suggest there were

upward of 1.5 million privately owned AWs in the United States when the ban took effect (American Medical Association Council on Scientific Affairs 1992; Cox Newspapers 1989, 1; Koper 2004, 10). Gun owners in America possessed an estimated 25 million guns that were equipped with LCMs or 10-round magazines in 1994 (Cook and Ludwig 1996, 17), and gun industry sources estimated that, including aftermarket items for repairing and extending magazines, there were at least 25 million LCMs available in the United States as of 1995 (Gun Tests 1995, 30). Moreover, an additional 4.8 million pre-ban LCMs were imported into the country from 1994 through 2000 under the grandfathering exemption, with the largest number arriving in 1999. During this same period, importers were also authorized to import another 42 million pre-ban LCMs that may have arrived after 2000.

Criminal Use of Assault Weapons and Large-Capacity Magazines Prior to the Ban

During the 1980s and early 1990s, AWs and other semi-automatic firearms equipped with LCMs were involved in a number of highly publicized mass shootings that raised public concern about the accessibility of high-powered, military-style weaponry and other guns capable of rapidly discharging high numbers of bullets (Cox Newspapers 1989; Kleck 1997, 124–126, 144; Lenett 1995; Violence Policy Center 2012). Perhaps most notably, AWs or other semi-automatics with LCMs were used in 6, or 40%, of 15 particularly severe mass shooting incidents between 1984 and 1993 that resulted in at least 6 deaths or at least 12 killed or wounded (Kleck, 1997, 124–126, 144). Early studies of AWs, though sometimes based on limited and potentially unrepresentative data, also suggested that AWs recovered by police were often associated with drug trafficking and organized crime (Cox Newspapers 1989, 4; also see Roth and Koper 1997, chap. 5), fueling a perception that AWs were guns of choice among drug dealers and other particularly violent groups. These events intensified concern over AWs and other semi-automatics with LCMs and helped spur the 1989 federal import ban on selected semi-automatic rifles (implemented by executive order) and the passage of the 1994 federal AW ban (the states of California, New Jersey, Connecticut, Hawaii, and Maryland also passed AW legislation between 1989 and 1994).

Looking at the nation's gun crime problem more broadly, numerous studies of AW-type weapons conducted prior to the federal ban found that AWs

typically accounted for up to 8% of guns used in crime, depending on the specific AW definition and data source used (e.g., see Beck et al. 1993; Hargarten et al. 1996; Hutson, Anglin, and Pratts 1994; Hutson et al. 1995; McGonigal et al. 1993; New York State Division of Criminal Justice Services 1994; Roth and Koper 1997, chap. 2; Zawitz 1995). A compilation of 38 sources indicated that AWs accounted for about 2% of crime guns on average (Kleck 1997, 112, 141–143). Similarly, the most common AWs prohibited by the 1994 federal ban accounted for between 1% and 6% of guns used in crime according to most of several national and local data sources examined for the NIJ-funded studies summarized here (Koper 2004, 15).

As with crime guns in general, the majority of AWs used in crime were assault pistols rather than assault rifles. Among AWs reported by police to ATF during 1992 and 1993, for example, assault pistols outnumbered assault rifles by a ratio of three to one.

The relative rarity of AW use in crime can be attributed to a number of factors. Many of these models are long guns, which are used in crime much less often than handguns. Also, as noted, a number of the rifles named in the 1994 law were banned from importation into the United States in 1989. Further, AWs in general are more expensive and more difficult to conceal than the types of handguns that are used most frequently in crime.

Criminal use of guns equipped with LCMs had not been studied as extensively as criminal use of AWs at the time of the ban. However, the overall use of guns with LCMs, which is based on the combined use of AWs and nonbanned guns with LCMs, is much greater than the use of AWs alone. Based on data examined for this and a few prior studies, guns with LCMs were used in roughly 13% to 26% of most gun crimes prior to the ban, though they appeared to be used in 31% to 41% of gun murders of police (see summary in Koper 2004, 18; also see Adler et al. 1995; Fallis 2011; New York Division of Criminal Justice Services 1994).

The Ban's Effects on Crimes with Assault Weapons and Large-Capacity Magazines

Although there was a surge in production of AW-type weapons as Congress debated the ban in 1994, the law's restriction of the new AW supply and the interest of collectors and speculators in these weapons helped to drive prices higher for many AWs (notably assault pistols) through the end of the 1990s

Table 12.2 Assault weapons as a percentage of guns recovered by police

City	Pre-ban	Post-ban	% change
Baltimore, MD	1.88% (1992–1993)	1.25% (1995–2000)	–34%
Boston, MA	2.16% (1991–1993)	0.6% (2000–2002)	–72%
Miami, FL	2.53% (1990–1993)	1.71% (1995–2000)	–32%
St. Louis, MO	1.33% (1992–1993)	0.91% (1995–2003)	–32%
Anchorage, AK	3.57% (1987–1993)	2.13% (1995–2000)	–40%
Milwaukee, WI	5.91% (1991–1993)	4.91% (1995–1998)	–17%

Note: Figures for Baltimore, Boston, Miami, and St. Louis are based on all recovered guns. Figures for Anchorage and Milwaukee are based on, respectively, guns tested for evidence and guns recovered in murder cases. Changes in Baltimore, Boston, Miami, and St. Louis were statistically significant at $p < .05$. See Koper (2004) for further details about the data and analyses.

and appeared to make them less accessible and/or affordable to criminal users.[3] Analyses of several national and local databases on guns recovered by police indicated that crimes with AWs declined following the ban.

To illustrate, the share of gun crimes involving the most commonly used AWs declined by 17% to 72% across six major cities examined for this study (Baltimore, Miami, Milwaukee, Boston, St. Louis, and Anchorage), based on data covering all or portions of the 1995–2003 post-ban period (Table 12.2). (The number of AW recoveries also declined by 28% to 82% across these locations and time periods; the discussion here focuses on changes in AWs as a share of crime guns in order to control for general trends in gun crime and gun seizures.) Similar patterns were found in a national analysis of recovered guns reported by law enforcement agencies around the country to ATF for investigative gun tracing.[4] The percentage of gun traces that were for AWs fell 70% between 1992–1993 and 2001–2002 (from 5.4% to 1.6%), though the interpretation of these data was complicated by changes that occurred during this time in gun tracing practices (see Koper 2004 for further discussion).

The decline in crimes with AWs was due primarily to a reduction in the use of assault pistols. Assessment of trends in the use of assault rifles was complicated by the rarity of crimes with such rifles and by the substitution in some cases of post-ban rifles that were very similar to the banned models. In general, however, the decline in AW use was only partially offset by substitution of post-ban AW-type models. Even counting the post-ban models as AWs, the share of crime guns that were AWs fell 24% to 60% across most of the local

jurisdictions studied. Patterns in the local data sources also suggested that crimes with AWs were becoming increasingly rare as the years passed.

The decline in crimes with AWs appeared to have been offset throughout at least the late 1990s by steady or rising use of other semi-automatics equipped with LCMs. Assessing trends in LCM use was difficult because there is no national data source on crimes with LCMs and few contacted jurisdictions maintained such information. It was possible, nonetheless, to examine trends in the use of guns with LCMs in four jurisdictions: Baltimore, Milwaukee, Anchorage, and Louisville (KY). Across the different samples analyzed from these cities (some databases included all recovered guns and some included only guns associated with particular crimes), the share of guns with an LCM generally varied from 14% to 26% prior to the ban. In all four jurisdictions, the share of crime guns equipped with LCMs rose or remained steady through the late 1990s (Table 12.3). These trends were driven primarily by handguns with LCMs, which were used in crime roughly three times as often as rifles with LCMs (though crimes with rifles having LCMs also showed no general decline). Generalizing from such a small number of jurisdictions must be done very cautiously, but the consistency of the findings across these geographically diverse locations strengthens the inference that they reflected a national pattern.

Failure to reduce LCM use for at least several years after the ban was likely because of the immense stock of exempted pre-ban magazines, which, as noted, was enhanced by post-ban imports. The trend in crimes with LCMs may have been changing by the early 2000s, but the available data were too limited and inconsistent to draw clear inferences (post-2000 data were available for only two of the four study sites).

Table 12.3 Guns with large-capacity magazines as a percentage of guns recovered by police (selected years)

City	Pre-ban	Late 1990s	Early 2000s
Baltimore, MD	14.0% (1993)	15.5% (1998)	15.7% (2003)
Anchorage, AK	26.2% (1992–1993)	30.0% (1999–2000)	19.2% (2001–2002)
Milwaukee, WI	22.4% (1993)	36.4% (1998)	N/A
Louisville, KY	N/A	20.9 (1996)	19.0% (2000)

Note: Figures for Baltimore and Milwaukee are based on, respectively, guns associated with violent crimes and with murders. Figures for Anchorage and Louisville are based on guns submitted for evidentiary testing. The Anchorage figures are based on handguns only. See Koper (2004) for further details about the data and analyses.

A later media investigation of LCM use in Richmond, Virginia, suggests that the ban may have had a more substantial impact on the supply of LCMs to criminal users by the time it expired in 2004. In that city, the share of recovered guns with LCMs generally varied between 18% and 20% from 1994 through 2000 but fell to 10% by 2004 (Fallis 2011). It is not clear whether the Richmond results represented a wider national or even regional trend. (The data from this study also show that after the ban was lifted, the share of Richmond crime guns with an LCM rose to 22% by 2008.)

The Ban's Impacts on Gun Violence

Because offenders could substitute non-banned guns and small magazines for banned AWs and LCMs, there was not a clear rationale for expecting the ban to reduce assaults and robberies with guns. But by forcing this weapon substitution, it was conceivable that the ban would reduce the number and severity of shooting deaths and injuries by reducing the number of shots fired in gun attacks (thus reducing the number of victims per gunfire incident and the share of gunshot victims sustaining multiple wounds). Based on this logic, the research team examined several indicators of trends in the lethality and injuriousness of gun violence for different portions of the 1995–2002 post-ban period. These included national-level analyses of gun murders, the percentage of violent gun crimes resulting in death, the share of gunfire cases resulting in wounded victims, the percentage of gunshot victimizations resulting in death, and the average number of victims per gun homicide incident. For selected localities, the team also examined trends in wounds per gunshot victim or the percentage of gunshot victims sustaining multiple wounds.

On balance, these analyses showed no discernible reduction in the lethality or injuriousness of gun violence during the post-ban years (see Koper 2004, Koper and Roth 2001, and Roth and Koper 1997). Nationally, for example, the percentage of violent gun crimes resulting in death (based on gun homicides, gun assaults, and gun robberies reported to the Uniform Crime Reports) was the same for the period 2001–2002 (2.9%) as it was for the immediate pre-ban period 1992–1993 (Koper 2004, 82, 92). Accordingly, it was difficult to credit the ban with contributing to the general decline in gun crime and gun homicide that occurred during the 1990s.

However, the ban's exemption of millions of pre-ban AWs and LCMs meant that the effects of the law would occur only gradually. Those effects were still

unfolding when the ban was lifted and may not have been fully realized until several years beyond that, particularly if importation of foreign, pre-ban LCMs had continued in large numbers. In light of this, it was impossible to make definitive assessments of the ban's impact on gun violence.

It was also difficult to judge the ban's effects on the more specific problem of mass shootings. The research team attempted to assess changes in mass shootings during the first few years of the ban, but this effort was hampered by the difficulty of counting these incidents (results can be sensitive to the definitions and data sources used) and identifying the specific types of guns and magazines used in them (Roth and Koper 1997, app. A). There is no national data source that provides detailed information on the types of guns and magazines used in shooting incidents or that provides full counts of victims killed and wounded in these attacks. Studying mass shootings in particular poses a number of challenges with regard to defining these events, establishing the validity and reliability of methods for measuring their frequency and characteristics (particularly if done through media searches, as is often necessary), and modeling their trends, as they are particularly rare events (e.g., see Duwe 2000; Roth and Koper 1997, app. A).

Nonetheless, the issue of mass shootings continues to be a catalyst to the debate surrounding AW legislation. A recent media compilation of 62 mass shooting incidents that involved the death of four or more people over the period 1982–2012, for instance, suggests that 25% of the guns used in these attacks were AW-type weapons (these were not precisely defined) and another 48% were other types of semi-automatic handguns (Follman, Aronsen, and Pan 2012). Continuing improvements in media search tools and greater attention to the types of guns and magazines used in multiple-victim attacks may improve prospects for examining this issue more rigorously in future studies.

Assessing the Potential Long-Term Effects of Banning Assault Weapons and Large-Capacity Magazines

Although available evidence is too limited to make firm projections, it suggests that the ban may have reduced shootings slightly had it remained in place long enough to substantially reduce crimes with both LCMs and AWs. A small number of studies suggest that gun attacks with semi-automatics—including AWs and other guns equipped with LCMs—tend to result in more shots fired, more persons wounded, and more wounds inflicted per victim

than do attacks with other firearms (see reviews in Koper 2004; Koper and Roth 2001; also see McGonigal et al. 1993; Richmond et al. 2003; Reedy and Koper 2003; Roth and Koper 1997). For example, in mass shooting incidents that resulted in at least 6 deaths or at least 12 total gunshot victims from 1984 through 1993, offenders who clearly possessed AWs or other semi-automatics with LCMs (sometimes in addition to other guns) wounded or killed an average of 29 victims in comparison to an average of 13 victims wounded or killed by other offenders (see Koper and Roth's [2001] analysis of data compiled by Kleck [1997, 144]).

Similarly, a study of handgun attacks in Jersey City, New Jersey, during the 1990s found that the average number of victims wounded in gunfire incidents involving semi-automatic pistols was in general 15% higher than in those involving revolvers (Reedy and Koper 2003). The study also found that attackers using semi-automatics to fire more than 10 shots were responsible for nearly 5% of the gunshot victims in the sample. Used as a tentative guide, this implies that the LCM ban could have eventually produced a small reduction in shootings overall, perhaps up to 5%, even if some gun attackers had the foresight to carry more than one small magazine (or more than one firearm) and the time and poise to reload during an attack.

Effects of this magnitude might be difficult to measure reliably, but they could nonetheless yield significant societal benefits. Consider that in 2010 there were 11,078 gun homicides in the United States and another 53,738 nonfatal assault-related shootings according to the federal Centers for Disease Control and Prevention (see the CDC's web-based injury statistics query and reporting system at http://www.cdc.gov/injury/wisqars/index.html). At these levels, reducing shootings by just 1% (arguably a reasonable ballpark estimate for the long-term impact of substantially reducing AW and LCM use) would amount to preventing about 650 shootings annually. The lifetime medical costs of assault-related gunshot injuries (fatal and nonfatal) were estimated to be about $18,600 per injury in 1994 (Cook et al. 1999). Adjusting for inflation, this amounts to $28,894 in today's dollars. Moreover, some estimates suggest that the full societal costs of gun violence—including medical, criminal justice, and other government and private costs (both tangible and intangible)—could be as high as $1 million per shooting (Cook and Ludwig 2000). Hence, reducing shootings by even a very small margin could produce substantial long-term savings for society, especially as the shootings prevented accrue over many years.

Lessons and Implications from the 1994 Ban

Studies of America's previous assault weapons ban provide a number of lessons that can inform future policymaking. A new law similar to the old ban will have little impact on most gun crimes, but it may prevent some shootings, particularly those involving high numbers of shots and victims. It may thus help to reduce the number and severity of mass shooting incidents as well as produce a small reduction in shootings overall.

The most important feature of the previous ban was the prohibition on large-capacity ammunition magazines. A large magazine is arguably the most critical feature of an assault weapon, and restrictions on magazines have the potential to affect many more gun crimes than do those on military-style weapons. Restrictions focused on magazine capacity may also have a greater chance of gaining sufficient public and political support for passage than would new restrictions on assault weapons, though current polling suggests that both measures are supported by three-quarters of non-gun owners and nearly half of gun owners (Barry et al., in this volume). To enhance the potential impact of magazine restrictions, policymakers might also consider limiting magazine capacity to fewer than 10 rounds for all or selected weapons (for example, lower limits might be set for magazines made for semi-automatic rifles).[5] It is unknown whether further restrictions on the outward features of semi-automatic weapons, such as banning weapons having any military-style features, will produce measurable benefits beyond those of restricting magazine capacity.

Policymakers must also consider the implications of any grandfathering provisions in new legislation. Assessing the political and practical difficulties of registering all assault weapons and large magazines or establishing turn-in or buyback programs for them is beyond the scope of this essay. Policymakers should note, however, that it may take many years to attain substantial reductions in crimes with banned weapons and/or magazines if a new law exempts the existing stock (which has likely grown considerably since the time of the original ban). Policies regarding exemptions must also explicitly address the status of imported guns and magazines.

Past experience further suggests that public debate on reinstating the ban or crafting a new one will raise prices and production of the guns and magazines likely to be affected. This could temporarily saturate the market for the guns and magazines in question (particularly if close substitutes emerge) and delay desired reductions in crimes with some categories of the banned weap-

onry (this appeared to happen with assault rifles that were banned by the 1994 law and may have contributed as well to the observed trends in use of large magazines).

A new ban on assault weapons and/or large-capacity magazines will certainly not be a panacea for America's gun violence problem nor will it stop all mass shootings. However, it is one modest measure that, like federal restrictions on fully automatic weapons and armor-piercing ammunition, can help to prevent the further spread of particularly dangerous weaponry.

NOTES

1. In general, the AW ban did not apply to semi-automatics possessing no more than one military-style feature listed under the ban's features test provision. Note, however, that firearms imported into the country still had to meet the "sporting purposes test" established under the federal Gun Control Act of 1968. In 1989, ATF determined that foreign semi-automatic rifles having any one of a number of named military features (including those listed in the features test of the 1994 AW ban) fail the sporting purposes test and cannot be imported into the country. In 1998, the ability to accept an LCM made for a military rifle was added to the list of disqualifying features. Consequently, it was possible for foreign rifles to pass the features test of the federal AW ban but not meet the sporting purposes test for imports (U.S. Department of the Treasury 1998).

2. Technically, the ban prohibited any magazine, belt, drum, feed strip, or similar device that has the capacity to accept more than 10 rounds of ammunition or which can be readily converted or restored to accept more than 10 rounds of ammunition. The ban exempted attached tubular devices capable of operating only with .22 caliber rimfire (i.e., low velocity) ammunition.

3. See Koper (2004), Koper and Roth (2002), and Roth and Koper (1997) for more extensive discussions of the ban's impacts on prices and production of AWs, non-banned firearms, and LCMs.

4. A gun trace is an investigation into the sales history of a firearm (e.g., see ATF 2000).

5. To support the formulation and evaluation of policy in this area, there are also a number of research needs worth noting. For one, it is important to develop better data on crimes with guns having LCMs. Policymakers should thus encourage police agencies to record information about magazines recovered with crime guns. Likewise, ATF should consider integrating ammunition magazine data into its national gun tracing system and encourage reporting of magazine data by police agencies that trace firearms. Second, there is a need for more studies that contrast the outcomes of attacks with different types of guns and magazines. Such studies would help to refine predictions of the change in gun deaths and injuries that would follow reductions in attacks with firearms having large-capacity magazines.

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EXHIBIT 43

PewResearchCenter

May 7, 2013

Gun Homicide Rate Down 49% Since 1993 Peak; Public Unaware

Pace of Decline Slows in Past Decade

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Gun Homicide Rate Down 49% Since 1993 Peak; Public Unaware

Pace of Decline Slows in Past Decade

By D'Vera Cohn, Paul Taylor, Mark Hugo Lopez, Catherine A. Gallagher, Kim Parker and Kevin T. Maass

CHAPTER 1: OVERVIEW

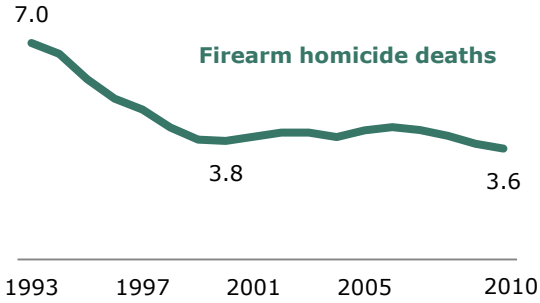
National rates of gun homicide and other violent gun crimes are strikingly lower now than during their peak in the mid-1990s, paralleling a general decline in violent crime, according to a Pew Research Center analysis of government data. Beneath the long-term trend, though, are big differences by decade: Violence plunged through the 1990s, but has declined less dramatically since 2000.

Compared with 1993, the peak of U.S. gun homicides, the firearm homicide rate was 49% lower in 2010, and there were fewer deaths, even though the nation's population grew. The victimization rate for other violent crimes with a firearm—assaults, robberies and sex crimes—was 75% lower in 2011 than in 1993. Violent non-fatal crime victimization overall (with or without a firearm) also is down markedly (72%) over two decades.

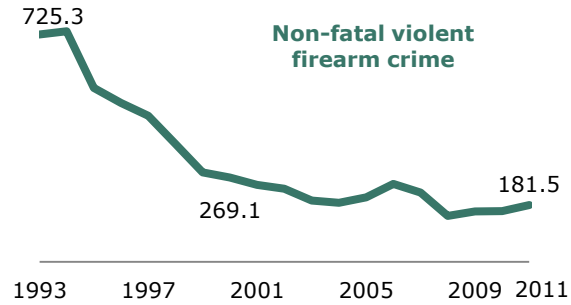
Nearly all the decline in the firearm homicide rate took place in the 1990s; the downward trend stopped in 2001 and resumed slowly in 2007. The victimization rate for other gun crimes

Crime Rates Drop in 1990s, Then Decline More Slowly

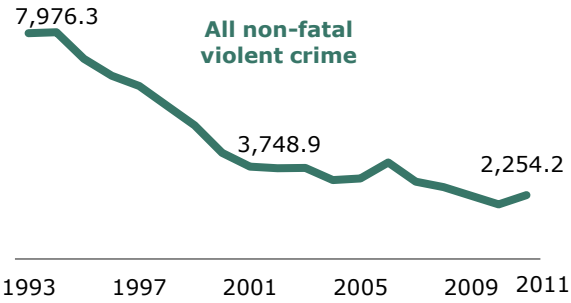
Deaths per 100,000 people (all ages)



Victimizations per 100,000 people ages 12 and older



Victimizations per 100,000 people ages 12 and older



Note: Data labels shown for 1993, 2000 and 2011. 2006 NCVS victimization estimates are not comparable with those in other years. See Methodology for details.

Sources: For firearm homicide deaths, CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS); for non-fatal victimizations, Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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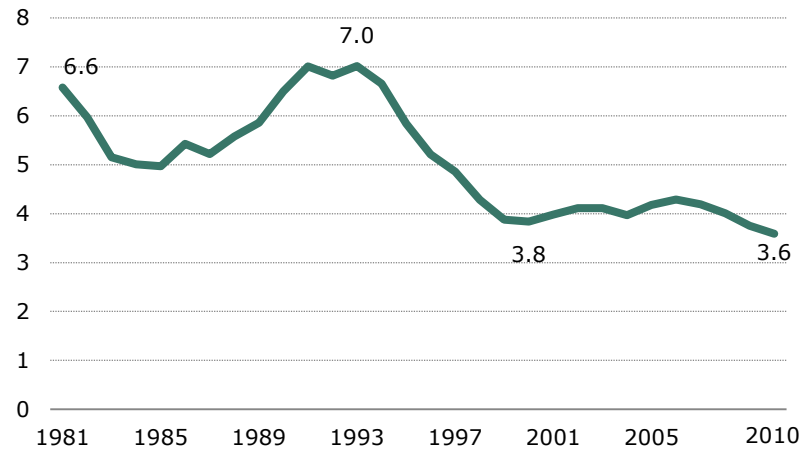
plunged in the 1990s, then declined more slowly from 2000 to 2008. The rate appears to be higher in 2011 compared with 2008, but the increase is not statistically significant. Violent non-fatal crime victimization overall also dropped in the 1990s before declining more slowly from 2000 to 2010, then ticked up in 2011.

Despite national attention to the issue of firearm violence, most Americans are unaware that gun crime is lower today than it was two decades ago. According to a new Pew Research Center survey, today 56% of Americans believe gun crime is higher than 20 years ago and only 12% think it is lower.

Looking back 50 years, the U.S. gun homicide rate began rising in the 1960s, surged in the 1970s, and hit peaks in 1980 and the early 1990s. (The number of homicides peaked in the early 1990s.) The plunge in homicides after that meant that firearm homicide rates in the late 2000s were equal to those not seen since the early 1960s.[1] The sharp decline in the U.S. gun homicide rate, combined with a slower decrease in the gun suicide rate, means that gun suicides now account for six-in-ten firearms deaths, the highest share since at least 1981.

Rate of Firearm Homicide Deaths, 1981-2010

Per 100,000 people



Note: Data labels shown for 1981, 1993, 2000 and 2010.

Source: CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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Trends for robberies followed a similar long-term trajectory as homicides (National Research Council, 2004), hitting a peak in the early 1990s before declining.

This report examines trends in firearm homicide, non-fatal violent gun crime victimization and non-fatal violent crime victimization overall since 1993. Its findings on firearm crime are based mainly on analysis of data from two federal agencies. Data from the Centers for Disease

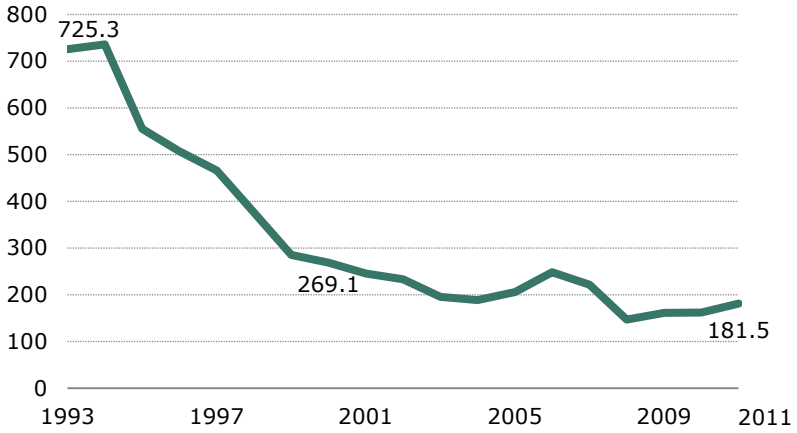
[1] See Cooper and Smith, 2011. The rate declined through at least 2010.

Control and Prevention, using information from death certificates, are the source of rates, counts and trends for all firearm deaths, homicide and suicide, unless otherwise specified. The Department of Justice's National Crime Victimization Survey, a household survey conducted by the Census Bureau, supplies annual estimates of non-fatal crime victimization, including those where firearms are used, regardless of whether the crimes were reported to police. Where relevant, this report also quotes from the FBI's Uniform Crime Reports (see text box at the end of this chapter and the Methodology appendix for more discussion about data sources).

Researchers have studied the decline in firearm crime and violent crime for many years, and though there are theories to explain the decline, there is no consensus among those who study the issue as to why it happened.

Rate of Non-fatal Firearm Crime,1993-2011

Victimizations per 100,000 people ages 12 and older



Note: Data labels shown for 1993, 2000 and 2011. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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There also is debate about the extent of gun ownership in the U.S., although no disagreement that the U.S. has more civilian firearms, both total and per capita, than other nations. Compared with other developed nations, the U.S. has a higher homicide rate and higher rates of gun ownership, but not higher rates for all other crimes. (See Chapter 5 for more details.)

In the months since the mass shooting at a Newtown, Conn., elementary school in December, the public is paying close attention to the topic of firearms; according to a recent Pew Research Center survey (Pew Research Center, April 2013) no story received more public attention from mid-March to early April than the debate over gun control. Reducing crime has moved up as a priority for the public in polling this year.

Mass shootings are a matter of great public interest and concern. They also are a relatively small share of shootings overall. According to a Bureau of Justice Statistics review, homicides that claimed at least three lives accounted for less than 1% of all homicide deaths from 1980 to 2008. These homicides, most of which are shootings, increased as a share of all homicides from 0.5% in 1980 to 0.8% in 2008, according to the bureau's data. A Congressional Research Service report, using a definition of four deaths or more, counted 547 deaths from mass shootings in the U.S. from 1983 to 2012.[2]

Looking at the larger topic of firearm deaths, there were 31,672 deaths from guns in the U.S. in 2010. Most (19,392) were suicides; the gun suicide rate has been higher than the gun homicide rate since at least 1981, and the gap is wider than it was in 1981.

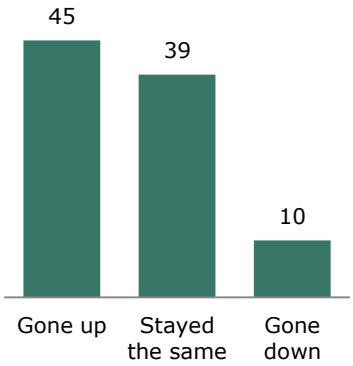
Knowledge about Crime

Despite the attention to gun violence in recent months, most Americans are unaware that gun crime is markedly lower than it was two decades ago. A new Pew Research Center survey (March 14-17) found that 56% of Americans believe the number of crimes involving a gun is higher than it was 20 years ago; only 12% say it is lower and 26% say it stayed the same. (An additional 6% did not know or did not answer.)

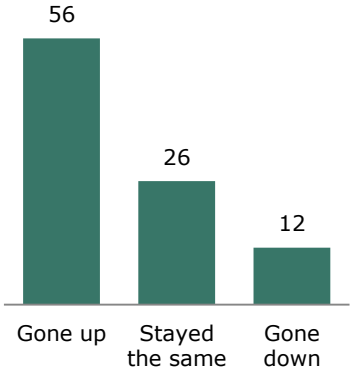
Men (46%) are less likely than women (65%) to say long-term gun crime is up. Young adults, ages 18 to 29, are markedly less likely than other adults to say long-term crime is up—44% do, compared with more than half of other adults. Minority adults are more likely than non-Hispanic whites to say that long-term gun crime is up, 62% compared with 53%.

Most Americans Unaware of Big Crime Drop Since 1990s

In recent years, has the number of gun crimes in America gone up, gone down or stayed the same? (%)



Compared with 20 years ago, has the number of gun crimes in America gone up, gone down or stayed the same? (%)



Note: "Don't know/Refused" responses not shown.

Source: Pew Research Center survey, March 14-17, 2013, N=924

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[2] A *USA Today* analysis in 2013 found that 934 people died since 2006 in mass shootings, defined as claiming at least four victims, and that most were killed by people they knew: http://www.usatoday.com/story/news/nation/2013/02/21/mass-shootings-domestic-violence-nra/1937041/

Asked about trends in the number of gun crimes "in recent years," a plurality of 45% believe the number has gone up, 39% say it is about the same and 10% say it has gone down. (An additional 5% did not know or did not answer.) As with long-term crime, women (57%) are more likely than men (32%) to say that gun crime has increased in recent years. So are non-white adults (54%) compared with whites (41%). Adults ages 50 and older (51%) are more likely than those ages 18-49 (42%) to believe gun crime is up.

What is Behind the Crime Decline?

Researchers continue to debate the key factors behind changing crime rates, which is part of a larger discussion about the predictors of crime.[3] There is consensus that demographics played some role: The outsized post-World War II baby boom, which produced a large number of people in the high-crime ages of 15 to 20 in the 1960s and 1970s, helped drive crime up in those years.

A review by the National Academy of Sciences of factors driving recent crime trends (Blumstein and Rosenfeld, 2008) cited a decline in rates in the early 1980s as the young boomers got older, then a flare-up by mid-decade in conjunction with a rising street market for crack cocaine, especially in big cities. It noted recruitment of a younger cohort of drug seller with greater willingness to use guns. By the early 1990s, crack markets withered in part because of lessened demand, and the vibrant national economy made it easier for even low-skilled young people to find jobs rather than get involved in crime.

At the same time, a rising number of people ages 30 and older were incarcerated, due in part to stricter laws, which helped restrain violence among this age group. It is less clear, researchers say, that innovative policing strategies and police crackdowns on use of guns by younger adults played a significant role in reducing crime.

Some researchers have proposed additional explanations as to why crime levels plunged so suddenly, including increased access to abortion and lessened exposure to lead. According to one hypothesis, legalization of abortion after the 1973 Supreme Court Roe v. Wade decision resulted in fewer unwanted births, and unwanted children have an increased risk of growing up to become criminals. Another theory links reduced crime to 1970s-era reductions in lead in gasoline; children's exposure to lead causes brain damage that could be associated with violent behavior. The National Academy of Sciences review said it was unlikely that either played a major role, but researchers continue to explore both factors.

[3] Much of this section draws from Blumstein and Rosenfeld, 2008.

The plateau in national violent crime rates has raised interest in the topic of how local differences might influence crime levels and trends. Crime reductions took place across the country in the 1990s, but since 2000, patterns have varied more by metropolitan area or city.[4]

One focus of interest is that gun ownership varies widely by region and locality. The National Academy of Sciences review of possible influences on crime trends said there is good evidence of a link between firearm ownership and firearm homicide at the local level; "the causal direction of this relationship remains in dispute, however, with some researchers maintaining that firearm violence elevates rates of gun ownership, but not the reverse."

There is substantial variation within and across regions and localities in a number of other realms, which complicates any attempt to find a single cause for national trends. Among the variations of interest to researchers are policing techniques, punishment policies, culture, economics and residential segregation.

Internationally, a decline in crime, especially property crime, has been documented in many countries since the mid-1990s. According to the authors of a 30-country study on criminal victimization (Van Dijk et al., 2007), there is no general agreement on all the reasons for this decline. They say there is a general consensus that demographic change—specifically, the shrinking proportion of adolescents across Europe—is a common factor causing decreases across Western countries. They also cite wider use of security measures in homes and businesses as a factor in reducing property crime.

But other potential explanations—such as better policing or increased imprisonment—do not apply in Europe, where policies vary widely, the report noted

Among the major findings of this Pew Research Center report:

U.S. Firearm Deaths

- In 2010, there were 3.6 gun homicides per 100,000 people, compared with 7.0 in 1993, according to CDC data.

- In 2010, CDC data counted 11,078 gun homicide deaths, compared with 18,253 in 1993.[5]

[4] The diversity of homicide trend by city was the topic of a recent forum, "Putting Homicide Rates in Their Place," sponsored by the Urban Institute.

[5] There were 11,101 gun homicide deaths in 2011 and the gun homicide rate remained 3.6 per 100,000 people, according to preliminary CDC data.

- Men and boys make up the vast majority (84% in 2010) of gun homicide victims. The firearm homicide rate also is more than five times as high for males of all ages (6.2 deaths per 100,000 people) as it is for females (1.1 deaths per 100,000 people).

- By age group, 69% of gun homicide victims in 2010 were ages 18 to 40, an age range that was 31% of the population that year. Gun homicide rates also are highest for adults ages 18 to 24 and 25 to 40.

- A disproportionate share of gun homicide victims are black (55% in 2010, compared with the 13% black share of the population). Whites were 25% of victims but 65% of the population in 2010. Hispanics were 17% of victims and 16% of the population in 2010.

- The firearm suicide rate (6.3 per 100,000 people) is higher than the firearm homicide rate and has come down less sharply. The number of gun suicide deaths (19,392 in 2010) outnumbered gun homicides, as has been true since at least 1981.

U.S. Firearm Crime Victimization

- In 2011, the NCVS estimated there were 181.5 gun crime victimizations for non-fatal violent crime (aggravated assault, robbery and sex crimes) per 100,000 Americans ages 12 and older, compared with 725.3 in 1993.

- In terms of numbers, the NCVS estimated there were about 1.5 million non-fatal gun crime victimizations in 1993 among U.S. residents ages 12 and older, compared with 467,000 in 2011.

U.S. Other Non-fatal Crime

- The victimization rate for all non-fatal violent crime among those ages 12 and older—simple and aggravated assaults, robberies and sex crimes, with or without firearms—dropped 53% from 1993 to 2000, and 49% from 2000 to 2010. It rose 17% from 2010 to 2011.

- Although not the topic of this report, the rate of property crimes—burglary, motor vehicle theft and theft—also declined from 1993 to 2011, by 61%. The rate for these types of crimes was 351.8 per 100,000 people ages 12 and older in 1993, 190.4 in 2000 and 138.7 in 2011.

Context

- The number of firearms available for sale to or possessed by U.S. civilians (about 310 million in 2009, according to the Congressional Research Service) has grown in recent years, and the 2009 per capita rate of one person per gun had roughly doubled since 1968. It is not clear, though, how many U.S. households own guns or whether that share has changed over time.

- Crime stories accounted for 17% of the total time devoted to news on local television broadcasts in 2012, compared with 29% in 2005, according to Pew Research Center's Project for Excellence in Journalism. Crime trails only traffic and weather as the most common type of story on these newscasts.

About the Data

Findings in this report are based on two main data sources:

Data on homicides and other deaths are from the Centers for Disease Control and Prevention, based on information from death certificates filed in state vital statistics offices, which includes causes of death reported by attending physicians, medical examiners and coroners. Data also include demographic information about decedents reported by funeral directors, who obtain that information from family members and other informants. Population data, used in constructing rates, come from the Census Bureau. Most statistics were obtained via the National Center for Injury Prevention and Control's Web-based Injury Statistics Query and Reporting System (WISQARS), available from URL: www.cdc.gov/ncipc/wisqars. Data are available beginning in 1981; suitable population data do not exist for prior years. For more details, see Appendix 4.

Estimates of crime victimization are from the National Crime Victimization Survey, a sample survey conducted for the Bureau of Justice Statistics by the Census Bureau. Although the survey began in 1973, this report uses data since 1993, the first year employing an intensive methodological redesign. The survey collects information about crimes against people and households, but not businesses. It provides estimates of victimization for the population ages 12 and older living in households and non-institutional group quarters; therefore it does not include populations such as homeless people, visiting foreign tourists and business travelers, or those living in institutions such as military barracks or mental hospitals. The survey collects information about the crimes of rape, sexual assault, personal robbery, aggravated and simple assault, household burglary, theft, and motor vehicle theft. For more details, see Appendix 4.

Roadmap to the Report

The remainder of this report is organized as follows. **Chapter 2** explores trends in firearm homicide and all firearm deaths, as well as patterns by gender, race and age. **Chapter 3** analyzes trends in non-fatal violent gun crime victimizations, as well as patterns by gender, race and age. **Chapter 4** looks at trends and subgroup patterns for non-fatal violent crime victimizations overall. **Chapter 5** examines issues related to the topic of firearms: crime news, crime as a public priority, U.S. gun ownership data, and comparison of ownership and crime rates with those in other nations. **Appendices 1-3** consist of detailed tables with annual data for firearm deaths, homicides and suicides, as well as non-fatal firearm and overall non-fatal violent crime victimization, for all groups and by subgroup. **Appendix 4** explains the report's methodology.

Notes on Terminology

All references to whites, blacks and others are to the non-Hispanic components of those populations. Hispanics can be of any race.

“Aggravated assault,” as defined by the Bureau of Justice Statistics, is an attack or attempted attack with a weapon, regardless of whether an injury occurred, and an attack without a weapon when serious injury results.

The terms “firearm” and “gun” are used interchangeably.

“Homicides,” which come from Centers for Disease Control and Prevention data, are fatal injuries inflicted by another person with intent to injure or kill. Deaths due to legal intervention or operations of war are excluded. Justifiable homicide is not identified.

“Robbery,” as defined by the Bureau of Justice Statistics, is a completed or attempted theft, directly from a person, of property or cash by force or threat of force, with or without a weapon, and with or without injury.

“Sex crime,” as defined by the Bureau of Justice Statistics, includes attempted rape, rape and sexual assault.

“Simple assault,” as defined by the Bureau of Justice Statistics, is an attack (or attempted assault) without a weapon resulting either in no injury, minor injury (for example, bruises, black eyes, cuts, scratches or swelling) or in undetermined injury requiring less than two days of hospitalization.

“Victimization” is based on self-reporting in the National Crime Victimization Survey, which includes Americans ages 12 and older. For personal crimes (which in this report include assault, robbery and sex crime), it is expressed as a rate based on the number of victimizations per 100,000 U.S. residents ages 12 and older. See the Methodology appendix for more details.

Acknowledgments

Many researchers and scholars contributed to this report. Senior writer D'Vera Cohn wrote the body of the report. Paul Taylor, senior vice president of the Pew Research Center, provided editorial guidance. Mark Hugo Lopez, senior researcher and associate director of the Pew Hispanic Center, managed the report's data analysis and wrote the report's methodology appendix. Catherine A. Gallagher, director of the Cochrane Collaboration of the College for Policy at George Mason University, provided guidance on the report's data analysis and comments on earlier drafts of the report. Lopez and Kim Parker, associate director of the Center's Social & Demographic Trends project, managed the report's development and production. Kevin T. Maass, research associate at the Cochrane Collaboration at George Mason University's College for Policy, provided analysis of the FBI's Uniform Crime Reports. Research Assistants Eileen Patten and Anna Brown number-checked the report and prepared charts and tables. Patten also conducted background research on trends in crime internationally. The report was copy-edited by Marcia Kramer of Kramer Editing Services.

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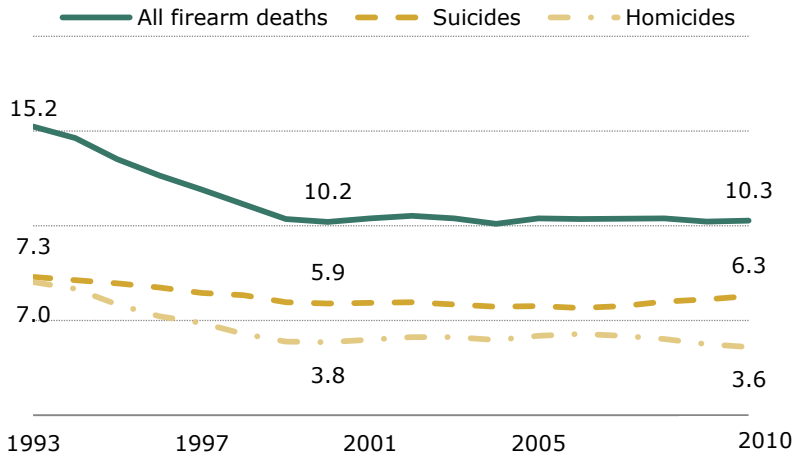
CHAPTER 2: FIREARM DEATHS

In 2010, there were 31,672 deaths in the U.S. from firearm injuries, mainly through suicide (19,392) and homicide (11,078), according to CDC compilation of data from death certificates.[6] The remaining firearm deaths were attributed to accidents, shootings by police and unknown causes. The gun homicide rate in 2010 was the lowest it had been since CDC began publishing data in 1981. Other homicide data, from the FBI's Uniform Crime Report (Cooper and Smith, 2011), indicate that homicide rates are as low now as they were in the 1960s.

Rate of Firearm Deaths, 1993-2010

Per 100,000 people



Note: Data labels shown for 1993, 2000 and 2010.

Source: Source: CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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The U.S. gun homicide rate and number of homicide victims plunged during the 1990s, but there has been little change since the end of that decade. From 1993 to 2000, the death rate dropped 45%, and the number of victims killed each year fell by nearly 7,500. From 2000 to 2010, the death rate declined 7%, and the number of victims did not change much.[7]

Still, due in part to recent increases in the number of suicides, firearm homicide accounted for 35% of firearm deaths in 2010, the lowest share since 1981, the first year for which the CDC published data.

The gun suicide rate has declined far less than the gun homicide rate since the mid-1990s; the gun suicide rate began rising in recent years, and the number of victims is slightly higher than two decades ago. See the textbox at the end of this section for more detail.

[6] According to preliminary 2011 data, there were 32,163 deaths by firearms, including 11,101 homicides and 19,766 suicides. The overall rate, 10.3 per 100,000 people, was unchanged.

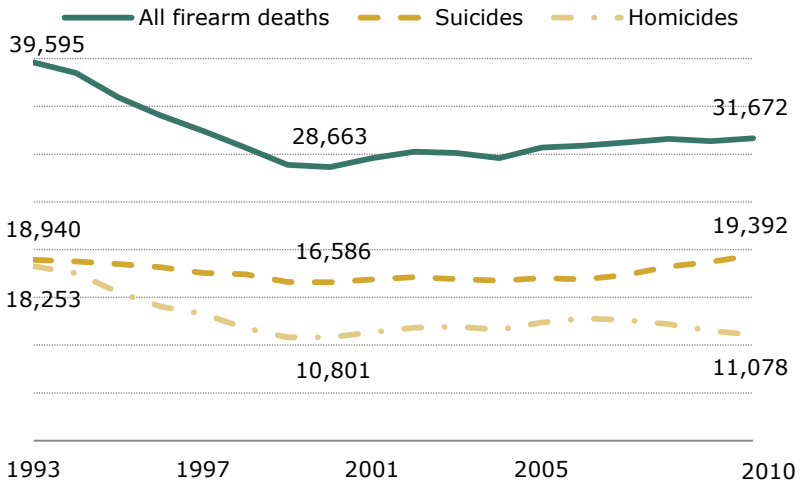
[7] According to preliminary 2011 CDC data, there was virtually no change from 2010 on these measures.

Firearms were used in 68% of homicides in 2010, according to CDC data. That share has ranged from 64% to 71% since the 1990s.[8] In 2010, firearm homicide was the fifth leading cause of violent death, after motor vehicle deaths, unintentional poisoning such as drug overdose, falls and suicide by firearm.

Homicide by means other than firearms also has declined, though not as much as gun homicide; the non-firearm rate declined 41% from 1993 to 2010, according to CDC data.

Another way of examining firearm violence is to look at data from the CDC for firearm injuries, which comes from a survey of hospital emergency rooms. In 2011, nearly 74,000 injuries from firearms were reported in the CDC database, according to a Pew Research Center analysis. Of those, about 56,000 (75%) resulted from assaults.[9] Since 2000, the share of firearm injuries that are the result of assaults has ranged from 63% to 75%.

Number of Firearm Deaths, 1993-2010



Note: Totals not shown for residual categories of firearm death, such as accidents. Data labels shown for 1993, 2000 and 2010.

Source: CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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[8] Except for 2001, the year that terrorist attacks killed about 3,000 people, when it was 56%.

[9] Remaining injuries were unintentional, deliberately self-inflicted or the result of "legal intervention" by law enforcement officers.

Deaths from mass shootings are a relatively small share of firearm homicides. According to a recent Congressional Research Service report (Congressional Research Service, 2013), 78 public mass shootings occurred in the United States from 1983 through 2012, claiming 547 lives and injuring 476 people. (The count does not include the shooters.)

The Congressional Research Service report did not assess whether mass shootings are more or less frequent than they used to be, but noted that they are relatively uncommon. It stated: "Mass shootings are rare, high-profile events, rather than broad trends that require systematic data collection to understand."

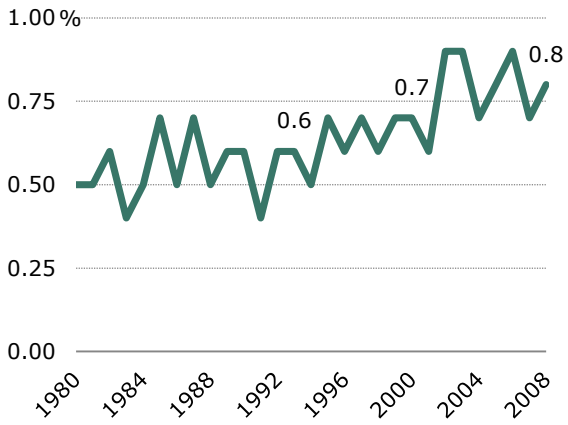
Noting that definitions differ, the report defined "public mass shootings" as those happening in relatively public places, killing at least four people (not including the shooter) and having a "somewhat indiscriminate" choice of victims. The violence in these cases counted by CRS was "not a means to an end such as robbery or terrorism."

A Bureau of Justice Statistics review of homicide trends from 1980 to 2008 (Cooper and Smith, 2011) found that homicides with multiple victims (in this case, three or more) have increased somewhat as a share of incidents, but are a small share of the total.[10] Less than 1% of homicides each year claim three or more victims. These homicides, most of which are shootings, increased as a share of all homicides from 0.5% in 1980 to 0.8% in 2008, according to the bureau's data.

Homicides with more than one victim were more likely to involve firearms than single-victim homicides, the review concluded. In 2008, 77% of homicides with two or more victims involved guns, according to the Bureau of Justice Statistics review, compared with 66% of single-victim homicides.

Multiple-victim Homicides Rise, But Are Still a Small Share of All Homicides

Homicides with three or more victims, as % of all homicides



Note: Data labels shown for 1993, 2000 and 2008.

Source: Bureau of Justice Statistics, 2011. Homicide Trends in the United States, 1980-2008. Washington, D.C.

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[10] Data in this Bureau of Justice Statistics report come from the FBI's Supplementary Homicide Reports, part of the Uniform Crime Reporting program. See Methodology for more details on differences between this source and the CDC data used elsewhere in this report.

Gender and Age Groups

Men (and boys) make up the vast majority (84% in 2010) of gun homicide victims.

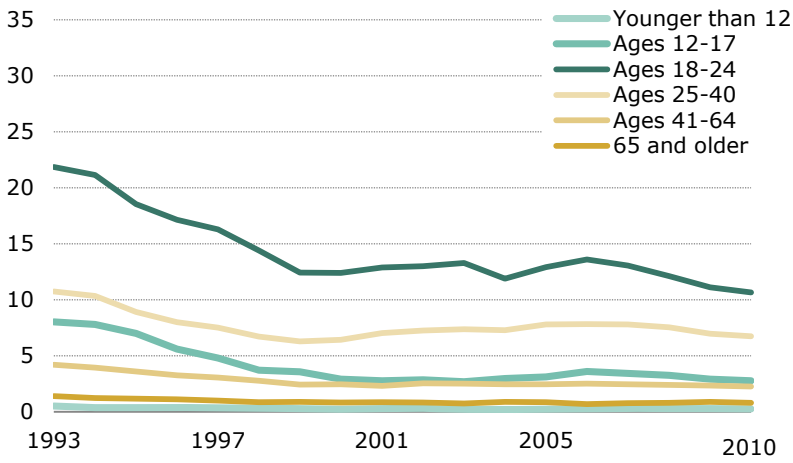
The gun homicide rates for both genders have declined by similar amounts since the mid-1990s, though the male rate is much higher—6.2 gun homicides per 100,000 people in 2010, compared with 1.1 for females.

By age group, 69% of gun homicide victims are ages 18 to 40, a proportion that has changed little since 1993. These groups also have the highest homicide rates: In 2010, there were 10.7 gun homicides per 100,000 people ages 18 to 24, compared with 6.7 among those ages 25 to 40, the next highest rate. The lowest rates are for children younger than 12 and for adults ages 65 and older.

Rates of gun homicide fell in all age groups from 1993 to 2000, most dramatically for teenagers, and leveled off or fluctuated since then. From 1993 to 2010, the gun homicide rate declined 65% for those ages 12 to 17, the largest percentage decrease among age groups. The smallest decrease, 37%, was for people ages 25 to 40.

Rate of Firearm Homicide Deaths, by Age, 1993-2010

Per 100,000 people



Note: See Appendix 1 for underlying data.

Source: CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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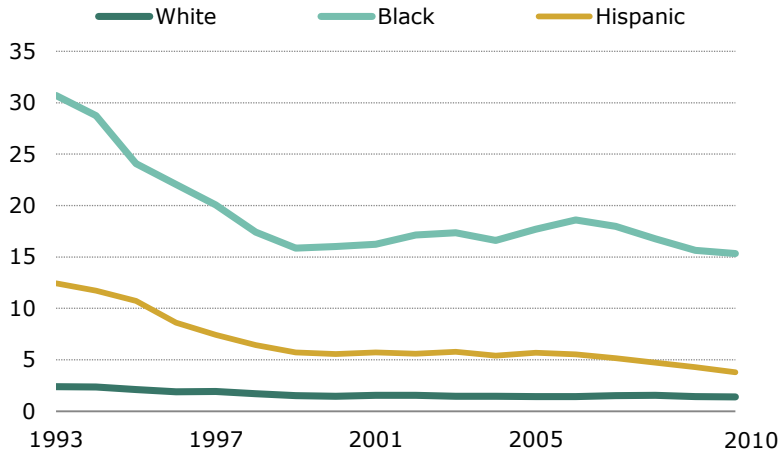
Younger adults are disproportionately likely to be firearms homicide victims. In 2010, young adults ages 18 to 24 were 30% of gun homicide victims in 2010, a higher likelihood than their 10% share of the population would suggest. Similarly, in 2010, people ages 25 to 40 accounted for 40% of gun homicide victims, though they were 21% of the population that year.

Racial and Ethnic Groups

Looked at by race, blacks are over-represented among gun homicide victims; blacks were 55% of shooting homicide victims in 2010, but 13% of the population. By contrast, whites are underrepresented; whites were 25% of the victims of gun homicide in 2010, but 65% of the population. For Hispanics, the 17% share of gun homicide victims was about equal to their 16% proportion of the total population.

Rate of Firearm Homicide Deaths, by Race/Ethnicity, 1993-2010

Per 100,000 people



Note: See Appendix 1 for underlying data. Whites and blacks include only non-Hispanics. Hispanics are of any race.

Source: CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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The black homicide death rate has declined 50% since its peak in 1993, and the number of black homicide deaths fell by more than a third (37%) from 1993 to 2010. The white homicide death rate has declined by 42% over that time, and the number of white homicide deaths declined 39%. The Hispanic shooting homicide rate fell 69% from 1993 to 2000, and the number of deaths declined by 40%. From 2000 to 2010, when the overall gun homicide rate decline slowed, the Hispanic rate fell 32%, while the black and white rates declined only 4%.

The share of victims by racial or ethnic group has changed little since 1993, but the makeup of the U.S. population has altered. For example, in 1993, Hispanics were 10% of the population, blacks 12% and whites 73%. From 1993 to 2010, the Hispanic population share rose 66%, but the Hispanic share of gun homicide victims has not increased.

The larger decline in gun homicides among blacks and Hispanics, compared with whites, has had a disproportionate effect in driving down the overall gun homicide rate. If the black and Hispanic homicide rates had declined at the same rate as that of whites, the U.S. gun homicide rate would have declined by 35%, instead of 49%, from 1993 to 2010, according to a Pew Research Center analysis.

Suicide by Firearm

Based on death certificates, 19,392 people killed themselves with firearms in 2010, according to data from the Centers for Disease Control and Prevention. That is the highest annual total since the CDC began publishing data in 1981, when the suicide toll was 16,139. Firearm suicide was the fourth leading cause of violent-injury death in 2010, following motor vehicle accidents, unintentional poison (including drug overdose) and falls. Firearms accounted for 51% of suicides in 2010.

The firearm suicide rate peaked in 1990, at 7.6 per 100,000 people, before declining or leveling off for most years since then. However, in recent years, the rate has risen somewhat: From 2007 to 2010, it went up 9%. The firearm suicide rate in 2010 (6.3 per 100,000 people) was the same as it was in 1998. Preliminary 2011 data show 19,766 deaths, and no change in rates from 2010.

The number of firearm suicides has been greater than the number of firearm homicides since at least 1981. But as firearm homicides have declined sharply, suicides have become a greater share of firearm deaths. In 2010, 61% of gun deaths were due to suicide, compared with about half in the mid-1990s. (The remaining firearm deaths, in addition to suicide and homicide, are accidental, of undetermined intent or the result of what the CDC terms "legal intervention," generally a police shooting.)

Males are the vast majority of gun suicides (87% in 2010), and the suicide rate for males (11.2 deaths per 100,000 people) is more than seven times the female rate (1.5 deaths). The highest firearm suicide rate by age is among those ages 65 and older (10.6 per 100,000 people). The rate for older adults has been relatively steady in recent years; the rate is rising, though, among those ages 41-64, according to CDC data. Among the three largest racial and ethnic groups, whites have the highest suicide rate at 8.5 per 100,000, followed by blacks (2.7) and Hispanics (1.9).

Comparing homicide and suicide rates, suicide rates are higher than homicide rates for men; they are about equal for women. By age group, suicide rates are higher than homicide rates only for adults ages 41-64 and those ages 65 and older. Homicide rates are higher than suicide rates for blacks and Hispanics; for whites, the suicide rate is higher than the homicide rate. Detailed tables on gun suicide can be found in Appendix 1.

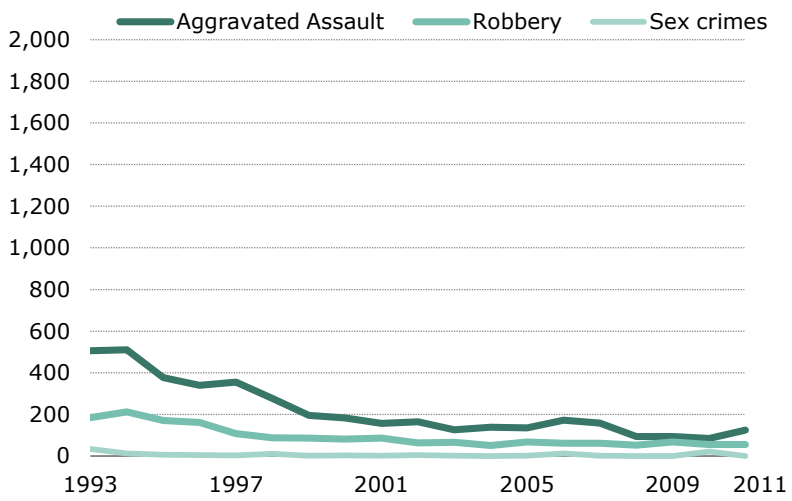
CHAPTER 3: NON-FATAL VIOLENT FIREARM CRIMES

Over the past two decades, the rate of non-fatal violent firearm crime victimizations among Americans ages 12 and older was highest in the early 1990s, and fell sharply (63%) from 1993 through 2000, according to analyses of data from the National Crime Victimization Survey. From 2000 to 2011, the rate declined 33%.

In 2009, 2010 and 2011, the rate of non-fatal firearm crime appeared to rise, compared with the prior year, but the changes are not statistically significant. In 2011, the non-fatal firearm crime rate was 75% lower than it had been in 1993.

Rate of Non-fatal Violent Firearm Crime, by Type of Crime, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: See Appendix 2 for underlying data, including cautions about small sample sizes for some years. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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For non-fatal gun crimes overall, there were 725.3 victimizations per 100,000 people ages 12 and older in 1993; in 2011, it fell to 181.5 victimizations per 100,000 people.

Non-fatal firearm crimes are defined throughout this section as aggravated assault, robbery and sex crimes in which the victim saw a weapon. Aggravated assault and robbery are the main components of non-fatal firearm crime; there are too few sex crimes reported to analyze annual trends reliably.

Over the 1993-2011 period, the victimization rate for aggravated assault with firearms declined 75% and the rate for robbery with firearms declined 70%.

The rate for both gun crimes displayed the same general pattern of large declines in the 1990s. From 2000 to 2011, rates for aggravated assault declined overall. There was no clear trend for robbery with a firearm from 2000 to 2011.

Gender

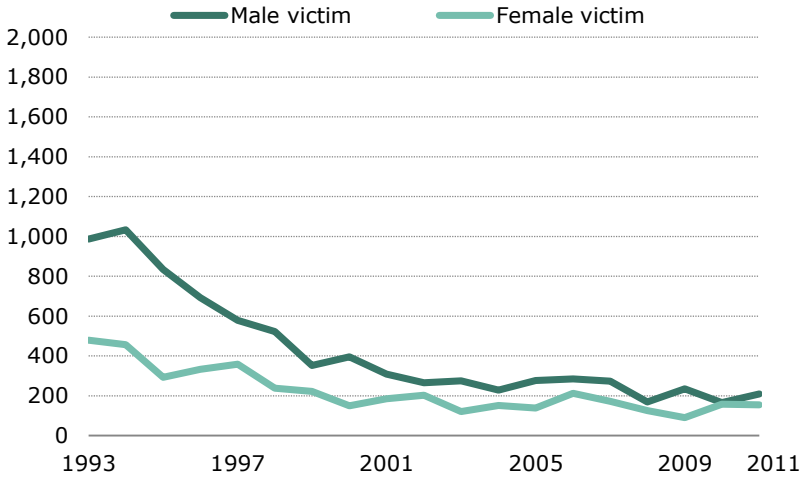
As with firearm homicide, males account for most victimizations by non-fatal violent firearm crime.[11] However, men and boys are not as large a share of non-fatal firearm crime victims as they were two decades ago.

Violent victimization rates involving firearms declined for both males and females from 1993 to 2011, with fluctuations in some years.

The male victimization rate declined somewhat more than the female rate—by 79% compared with 68%—from 1993 to 2011. As a result, the share of non-fatal firearm crime victimizations involving men and boys, 66% in 1993, declined to 56% in 2011. The 2011 share of victimizations is higher than the 49% male share of the U.S. population ages 12 and older.

Rate of Non-fatal Violent Firearm Crime, by Gender of Victim, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: See Appendix 2 for underlying data. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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Girls and women made up 51% of the U.S. population ages 12 and older in 2011 but were 44% of the victims of non-fatal violent firearm crime in that age group.

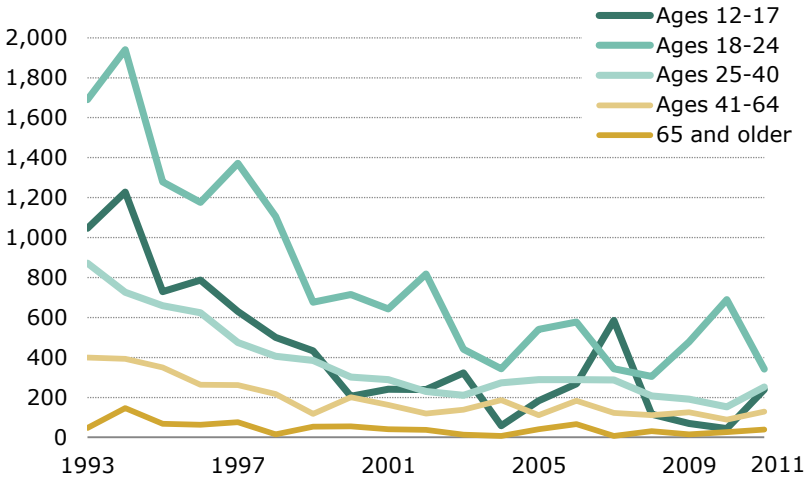
[11] Firearms homicides are based on the total population and victimizations on the population ages 12 and older.

Age Groups

As with gun homicides, young adults are at higher risk than older adults of being the victim of a non-fatal gun crime.

Rate of Non-fatal Violent Firearm Crime, by Age of Victim, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: See Appendix 2 for underlying data, including cautions about small sample sizes for some age groups for some years. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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Two decades ago, young adults ages 18 to 24 were more likely than any other age group (among the population ages 12 and older in the victimization survey) to be a victim of non-fatal firearm crime. But the victimization rate of 18- to 24-year-olds declined 80% from 1993 to 2011, compared with the 75% overall decline in non-fatal firearm victimization during those years. By 2011, the rate for this age group was only higher than rates for adults ages 41 and older, but not statistically different from the rate for 12- to 17-year-olds or 25- to 40-year-olds.

In both 1993 and 2011, adults ages 65 and older were less likely than other age groups to be the victim of non-fatal firearm crimes.[12] Adults ages 41 to 64 had lower victimization rates for non-fatal firearm crime in 1993 than younger age groups; in 2011, this group had lower rates than adults ages 18 to 24 and 25 to 40, but not than those ages 12 to 17.

[12] This finding should be interpreted with caution because the estimated victimization rate for adults ages 65 and older is based on a sample of fewer than 10 cases.

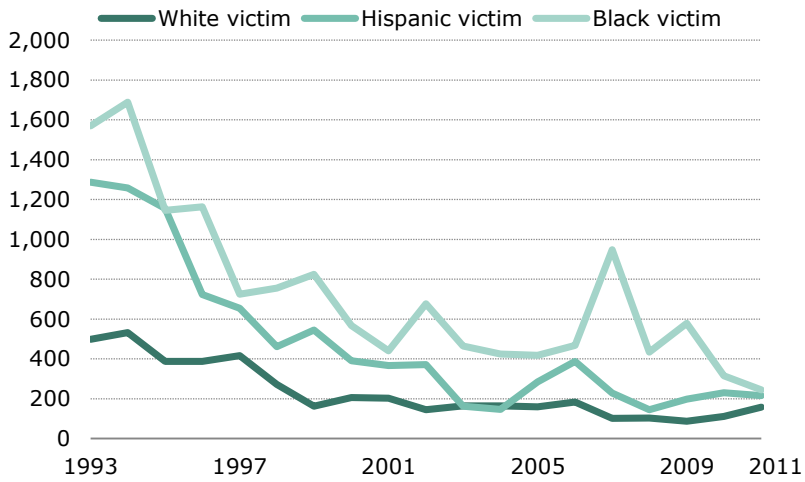
Racial and Ethnic Groups

In 2011, the white rate of non-fatal gun crime victimization appears to be somewhat lower than those of Hispanics and blacks, although the differences are not statistically significant. (Those rates were 158.7 victimizations per 100,000 people ages 12 and older for whites, 215.0 for Hispanics and 245.5 for blacks.)

That is different from the pattern for gun homicide, and represents a change from 1993, when the white victimization rate (499.1 per 100,000 people ages 12 and older) was lower than those for Hispanics (1,286.8) and blacks (1,570.0) ages 12 and older.

Rate of Non-fatal Violent Firearm Crime, by Race/Ethnicity of Victim, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: See Appendix 2 for underlying data, including cautions about small sample sizes in some years. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Whites and blacks include only non-Hispanics. Hispanics are of any race.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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The non-fatal firearm crime victimization rates of Hispanic and black Americans ages 12 and older fell somewhat more sharply than the white rate from 1993 to 2011: by 83% for Hispanics and 84% for blacks, compared with 68% for whites. The Hispanic population ages 12 and older has more than doubled in size since then, so its rate is a larger factor than in the past in driving the overall rate. (The black population grew 24% in that time, and the white population grew 7%).

All three groups showed a similar pattern of sharper declines from 1993 to 2000 than over the period from 2000 to 2011, for those ages 12 and older. However, in the period from 2008 to 2011, the non-fatal gun crime rate rose for whites (54%). After a single-year spike in 2007, the rate declined for blacks from 2008 to 2011 (44%).

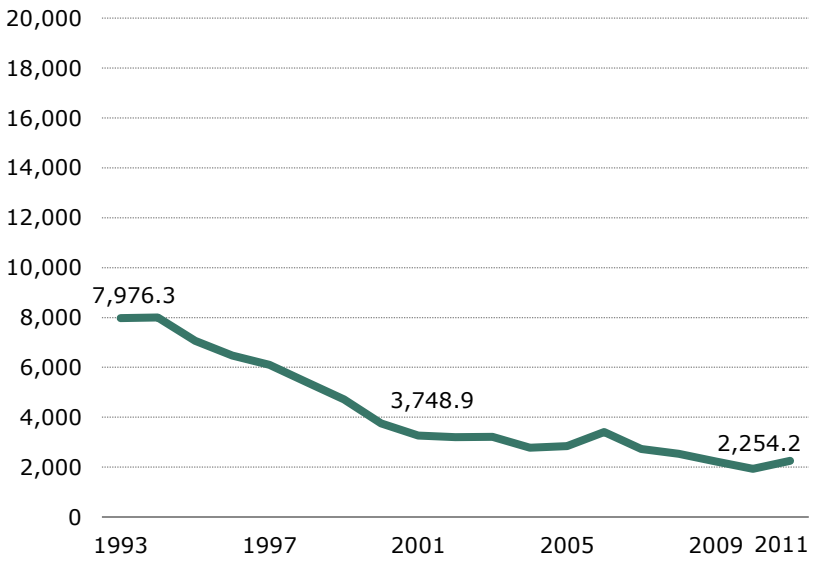
CHAPTER 4: ALL NON-FATAL VIOLENT CRIMES

As with firearm crimes, the rate of overall non-fatal violent crime—defined as aggravated or simple assault, robbery or sex crimes (with or without a gun)—also is lower than it was in the early 1990s. From 1993 to 2011, the U.S. non-fatal violent crime victimization rate for Americans ages 12 and older declined 72%.

There were 2,254 non-fatal violent crime victimizations per 100,000 Americans ages 12 and older in 2011, compared with 7,976 in 1993. The number of such victimizations in 2011—5.8 million—also was a decline from 16.8 million victimizations in 1993.

Rate of Non-fatal Violent Crime, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: Data labels shown for 1993, 2000 and 2011. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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The non-fatal violent crime victimization rate declined 53% from 1993 to 2000 and decreased an additional 49% from 2000 to 2010. In 2011, the rate grew by 17%.

Looking at the main components of non-fatal violent crime, in 2011, 31% of aggravated assault victimizations involved a gun, the same share as in 1993. In 2011, 26% of robbery victimizations involved a gun, similar to the 22% share in 1993.

By gender, males accounted for 55% of non-fatal violent crime victimizations in 2011, somewhat higher than their 49% proportion of the population ages 12 and older.

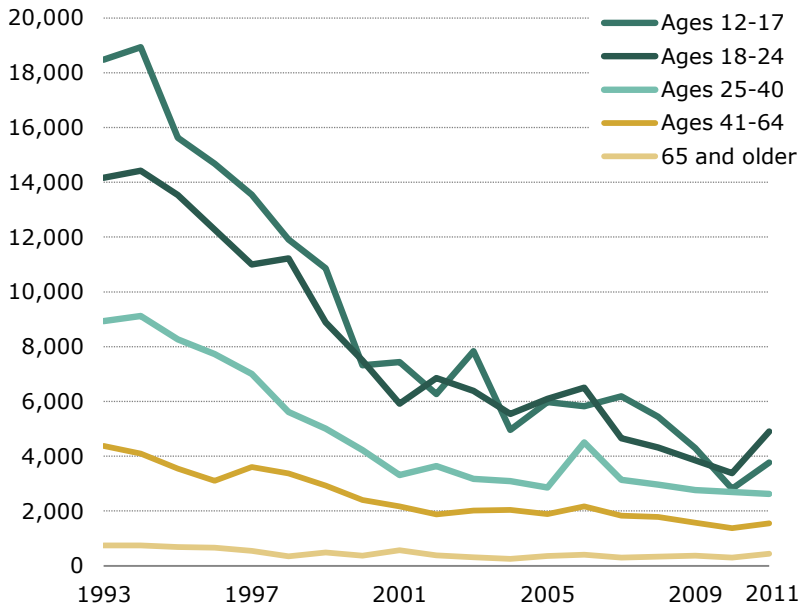
Age Groups

In terms of age, young adults have the highest victimization rates. The highest rate is among those ages 18 to 24, followed by those ages 12 to 17.

Those ages 12 to 24 are a higher share of victims (41% in 2011) than of the population ages 12 and older (21%). Adults ages 41 and older are a lower share of victims (29%) than their share of the population ages 12 and older (53%). Those ages 25 to 40 are a slightly larger share of victims (30%) than of the population ages 12 and older (26%).

Non-fatal Violent Crime Rate, by Age of Victim, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: See Appendix 3 for underlying data. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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Teens ages 12 to 17, for example, are 9% of the population ages 12 and older but were 16% of the victims of non-fatal violent crime in 2011. Adults ages 65 and older are 15% of the population ages 12 and older but were 3% of the victims of non-fatal violent crime in 2011.

Racial and Ethnic Groups

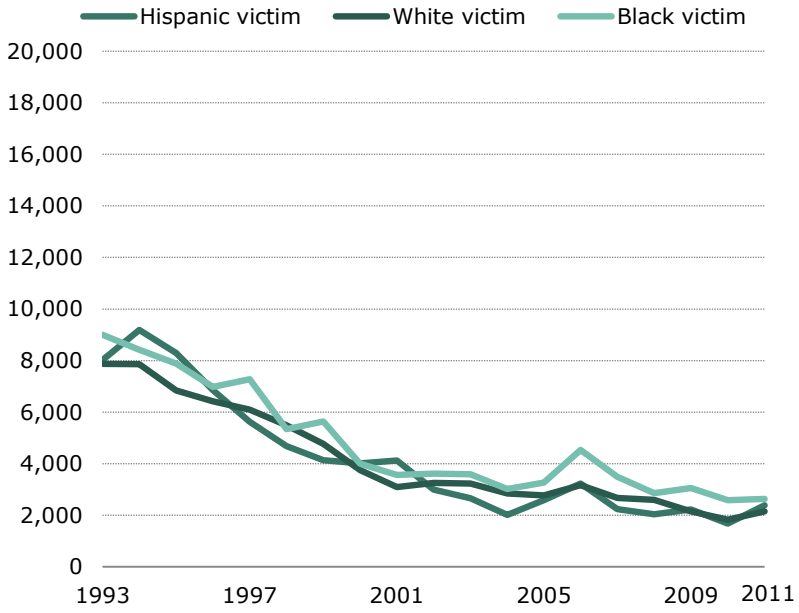
There were no statistically significant differences by racial and ethnic group in 2011 rates of non-fatal violent crime.

Non-fatal violent crime rates declined at a similar pace from 1993 to 2010 among those ages 12 and older in the nation's three largest racial and ethnic groups—77% for whites, 79% for Hispanics and 71% for blacks.

From 2010 to 2011, the non-fatal violent crime rate for Hispanics went up 42%; the rate for whites rose 18%; and the rate for blacks was essentially stable (up 2%).

Non-fatal Violent Crime Rate, by Race/Ethnicity of Victim, 1993-2011

Victimizations per 100,000 people ages 12 and older



Note: See Appendix 3 for underlying data. Whites and blacks include only non-Hispanics. Hispanics are of any race. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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CHAPTER 5: CONTEXT

Crime News

Americans are hearing less about crime these days on their local television newscasts than they did a few years ago, but crime remains a common type of story on these local broadcasts, trailing only traffic and weather.

According to the "The State of the News Media 2013" report from Pew Research Center's Project for Excellence in Journalism (Pew Research Center's Project for Excellence in Journalism, 2013) crime accounted for 17% of the total time devoted to news on local broadcasts in 2012, compared with 29% in 2005. The largest component of local newscasts, traffic and weather stories, accounted for 29% of local newscast content in 2012, compared with 25% in 2005.

Looking at the national newscasts on ABC, CBS and NBC, crime news grew somewhat as a percentage of the network TV evening time devoted to news, to 9% in 2012 from 7% in 2007.

Crime coverage on the morning network shows grew to 14% of the time devoted to news in 2012, compared with 9% in 2007. This was due largely to stories about the death of Trayvon Martin, an unarmed Florida teenager who was fatally shot by a neighborhood watch volunteer. Trayvon Martin coverage also was a factor in the growth of crime coverage on the evening news.

News stories about fatal shootings were among the coverage most closely followed by the public in 2012, according to the Pew Research Center's News Interest Index. The fatal mass shooting at an elementary school in Newtown, Conn., ranked second in public attention, behind the presidential election, with 57% of Americans saying they followed the story very closely. The mass shooting in an Aurora, Colo., movie theater ranked fifth, with 48% following it very closely. The Trayvon Martin shooting ranked 11th, with 35% of Americans saying they tracked the story very closely (Pew Research Center for the People & the Press, 2012).

More recently, 39% of Americans say they followed very closely the debate about gun control in late April, the week the Senate rejected gun control legislation. It was the second most closely followed story from April 18 to 21, following the bombings at the Boston marathon (Pew Research Center for the People & the Press, 2013).

Public Priority to Crime

When it comes to the public's priorities for the president and Congress, reducing crime has rebounded as a top concern. In a Pew Research Center survey in January, the month after the mass shooting in Newtown, 55% of Americans called crime reduction a top priority for Washington (Pew Research Center, January 2013). Two years ago, in 2011, just 44% said so. However, the share is much lower than it was in Pew Research Center surveys in the early 1990s or 2000s, when three-quarters or more said reducing crime should be a top priority.

Strengthening gun control laws was rated a top priority for officials in Washington by 37% of Americans in the January Pew Research Center survey. Gun control had last been included in the annual public priorities survey in 2001; in the survey that year, 47% of Americans called it a top priority.

Gun Ownership

The number of firearms available for sale to or possessed by U.S. civilians has grown in recent years, according to the Congressional Research Service and other research. A 2012 CRS report estimated that about 310 million firearms were available to or owned by civilians in the U.S. in 2009—114 million handguns, 110 million rifles and 86 million shotguns (Congressional Research Service, 2012). The figure was derived from manufacturing, export and import data published by the Bureau of Alcohol, Tobacco, Firearms and Explosives. The 2009 per capita rate of one person per gun in the U.S. had roughly doubled since 1968, the report said.

The 2007 Small Arms Survey, conducted by the Graduate Institute of International and Development Studies in Geneva (Completing the Count, 2007), estimated that 270 million firearms were owned by private citizens in the U.S. that year,[13] or about 90 firearms per 100 people. The Small Arms Survey relied on ATF data and independent surveys.

It is not clear, however, how many U.S. households owned guns or whether the share of gun-owning U.S. households has changed over time.

According to a recent Pew Research Center survey (Pew Research Center, March 2013) 37% of adults say they or someone else in their household owns a firearm of some kind. The 2012 General Social Survey (GSS) reports 34% do. However, a Gallup survey in 2012 found that 43% of respondents said there was at least one gun in their household.

[13] The CRS report estimated that civilians had 294 million firearms available for sale or owned in 2007.

As for whether gun ownership is rising or falling, the GSS reports a long trend of decline. In 1973, about half of households (49%) owned firearms, according to GSS data. Gallup survey data indicates that the share of households with guns is the same now as in 1972 (43%), although there was a dip in gun ownership in the 1990s.

Respondent error or misstatement in surveys about gun ownership is a widely acknowledged concern of researchers. People may be reluctant to disclose ownership, especially if they are concerned that there may be future restrictions on gun possession or if they acquired their firearms illegally. For whatever reason, husbands are more likely than wives to say there is a firearm in their households (Wright et al., 2012). Household surveys do not cover all gun ownership; they include only firearms owned by people in households.

As a 2004 National Academy of Sciences review stated, “Concerns about response errors in self-reported surveys of firearms possession and use require much more systematic research before surveys can be judged to provide accurate data to address critical issues in the study of firearms and violence. … Without systematic research on these specific matters, scientists can only speculate” (National Research Council, 2004).

International Context

How do U.S. gun ownership or gun crime compare with those in other nations? Although international data collection suffers from the same problems as gathering information about guns in the U.S., most research agrees that civilians in the United States own more firearms both total and per capita than those in any other nation.

The Small Arms Survey in 2007 found not only that U.S. civilians had more total firearms than any other nation (270 million) but also that the rate of ownership (about 90 firearms for every 100 people) was higher than in other countries. “With less than 5 percent of the world’s population, the United States is home to 35-50 per cent of the world’s civilian-owned guns,” according to the survey, which included estimates for 178 countries.

As for gun crime, research has found that the U.S. has a higher gun homicide and overall homicide rate than most developed nations, although the U.S. does not have the world’s highest rate for either. The U.S. does not outrank other developed nations for overall crime, but crimes with firearms are more likely to occur in the U.S. (Van Dijk, et al., 2007).

The United Nations Global Study on Homicide (UNODC, 2011) estimated that 199,000 homicides, or 42% of the 468,000 worldwide total in 2010, were committed by firearm.

According to U.N. statistics, the U.S. firearm homicide rate and overall homicide rate are higher than those in Canada and in Western European and Scandinavian nations, but lower than those in many Caribbean and Latin American countries for which data are available.

Where does the U.S. rank internationally in terms of gun crime of all types? A report that compared 2003-2004 victimization survey data for 30 countries, including most developed nations, found that the U.S. ranked about average in an overall index of common crimes (Van Dijk et al., 2007).

However, the report placed the U.S. among the top countries for attacks involving firearms. “Mexico, the USA and Northern Ireland stand out with the highest percentages gun-related attacks (16%, 6% and 6% respectively).” The U.S. had the highest share of sexual assault involving guns.

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APPENDIX 1: ADDITIONAL TABLES ON FIREARM DEATHS

All Firearm Deaths, Total and by Gender, 1981-2010

	All		Male		Female	
	Number	Rate (per 100,000)	Number	Rate (per 100,000)	Number	Rate (per 100,000)
Year						
2010	31,672	10.3	27,356	18.0	4,316	2.7
2009	31,347	10.2	26,921	17.9	4,426	2.8
2008	31,593	10.4	27,336	18.3	4,257	2.8
2007	31,224	10.4	27,047	18.3	4,177	2.7
2006	30,896	10.4	26,712	18.2	4,184	2.8
2005	30,694	10.4	26,657	18.4	4,037	2.7
2004	29,569	10.1	25,498	17.7	4,071	2.7
2003	30,136	10.4	26,124	18.3	4,012	2.7
2002	30,242	10.5	26,098	18.5	4,144	2.8
2001	29,573	10.4	25,480	18.2	4,093	2.8
2000	28,663	10.2	24,582	17.8	4,081	2.8
1999	28,874	10.3	24,700	18.1	4,174	2.9
1998	30,708	11.1	26,189	19.4	4,519	3.2
1997	32,436	11.9	27,756	20.8	4,680	3.4
1996	34,040	12.6	29,183	22.1	4,857	3.5
1995	35,957	13.5	30,724	23.6	5,233	3.8
1994	38,505	14.6	33,021	25.7	5,484	4.1
1993	39,595	15.2	33,711	26.6	5,884	4.4
1992	37,776	14.7	32,425	25.9	5,351	4.1
1991	38,317	15.1	32,882	26.6	5,435	4.2
1990	37,155	14.9	31,736	26.1	5,419	4.2
1989	34,776	14.1	29,596	24.6	5,180	4.1
1988	33,989	13.9	28,674	24.1	5,315	4.2
1987	32,895	13.6	27,569	23.4	5,326	4.3
1986	33,373	13.9	28,084	24.0	5,289	4.3
1985	31,566	13.3	26,382	22.8	5,184	4.2
1984	31,331	13.3	26,229	22.9	5,102	4.2
1983	31,099	13.3	25,945	22.8	5,154	4.3
1982	32,957	14.2	27,517	24.4	5,440	4.6
1981	34,050	14.8	28,343	25.4	5,707	4.8

Notes: Firearm deaths include those that are unintentional, violence-related (suicide, homicide and legal intervention) and of undetermined intent.

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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All Firearm Deaths, by Age, 1981-2010

	-----Younger than 12-----		--------Ages 12-17--------		--------Ages 18-24--------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	180	0.4	1,157	4.6	5,244	17.1
2009	182	0.4	1,210	4.7	5,259	17.2
2008	192	0.4	1,283	5.0	5,586	18.5
2007	195	0.4	1,325	5.1	5,780	19.4
2006	185	0.4	1,408	5.4	5,971	20.2
2005	171	0.4	1,319	5.1	5,735	19.5
2004	147	0.3	1,238	4.8	5,513	18.8
2003	158	0.3	1,159	4.6	5,909	20.4
2002	191	0.4	1,252	5.0	5,756	20.2
2001	194	0.4	1,239	5.0	5,668	20.2
2000	176	0.4	1,368	5.7	5,467	20.1
1999	190	0.4	1,586	6.6	5,508	20.6
1998	235	0.5	1,736	7.3	6,061	23.3
1997	249	0.5	2,035	8.6	6,519	25.6
1996	264	0.6	2,259	9.8	6,936	27.5
1995	272	0.6	2,762	12.1	7,597	29.8
1994	278	0.6	3,040	13.7	8,610	33.5
1993	346	0.8	2,945	13.6	8,870	34.2
1992	308	0.7	2,740	13.0	8,353	32.0
1991	286	0.6	2,659	13.0	8,370	31.7
1990	312	0.7	2,386	11.9	7,628	28.4
1989	368	0.8	2,129	10.6	6,754	24.9
1988	331	0.8	1,998	9.7	6,278	23.0
1987	302	0.7	1,690	8.1	5,985	21.6
1986	267	0.6	1,667	7.8	6,187	21.9
1985	316	0.8	1,567	7.2	5,689	19.7
1984	302	0.7	1,464	6.7	5,771	19.6
1983	269	0.7	1,379	6.2	5,853	19.6
1982	338	0.8	1,462	6.5	6,504	21.6
1981	347	0.9	1,593	7.0	7,119	23.5

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All Firearm Deaths, by Age, 1981-2010 (Cont.)

	--------Ages 25-40--------		--------Ages 41-64--------		--------65 and older--------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	9,059	13.8	11,322	11.6	4,703	11.7
2009	8,918	13.6	11,047	11.4	4,723	11.9
2008	9,201	14.1	10,761	11.2	4,566	11.8
2007	9,287	14.3	10,334	10.9	4,292	11.3
2006	9,177	14.2	9,963	10.7	4,183	11.3
2005	9,237	14.3	9,897	10.8	4,325	11.8
2004	8,915	13.8	9,539	10.7	4,190	11.6
2003	9,192	14.1	9,468	10.9	4,232	11.8
2002	9,410	14.3	9,216	10.8	4,402	12.4
2001	9,416	14.2	8,673	10.5	4,364	12.4
2000	9,092	13.5	8,278	10.4	4,264	12.2
1999	9,326	13.8	7,911	10.2	4,333	12.5
1998	9,872	14.4	8,264	11.0	4,514	13.0
1997	10,778	15.6	8,331	11.4	4,497	13.1
1996	11,334	16.4	8,509	12.0	4,710	13.8
1995	12,183	17.7	8,337	12.1	4,776	14.1
1994	13,372	19.5	8,441	12.6	4,734	14.2
1993	13,716	20.0	8,749	13.5	4,935	15.0
1992	13,133	19.3	8,426	13.3	4,789	14.8
1991	13,536	20.0	8,499	13.8	4,916	15.5
1990	13,442	20.1	8,356	13.9	4,980	15.9
1989	12,560	18.9	8,077	13.7	4,852	15.8
1988	12,568	19.1	7,883	13.6	4,880	16.2
1987	11,929	18.2	8,042	14.2	4,909	16.6
1986	12,181	19.1	8,265	14.7	4,758	16.4
1985	11,385	18.3	8,139	14.6	4,443	15.6
1984	11,306	18.6	8,238	14.9	4,217	15.1
1983	11,449	19.3	8,169	15.0	3,949	14.4
1982	12,215	21.2	8,609	15.9	3,799	14.2
1981	12,630	22.6	8,950	16.6	3,377	12.9

Notes: Firearm deaths include those that are unintentional, violence-related (suicide, homicide and legal intervention) and of undetermined intent.

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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All Firearm Deaths, Total and by Race/Ethnicity, 1990-2010

	---------All---------		-------White-------		------Hispanic------		-------Black-------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year								
2010	31,672	10.3	20,513	10.2	3,008	6.0	7,330	18.6
2009	31,347	10.2	19,955	10.0	3,202	6.5	7,345	18.8
2008	31,593	10.4	19,873	9.9	3,256	6.8	7,741	20.0
2007	31,224	10.4	18,861	9.5	3,492	7.6	8,133	21.3
2006	30,896	10.4	18,312	9.2	3,464	7.8	8,294	22.0
2005	30,694	10.4	18,521	9.3	3,469	8.1	7,865	21.1
2004	29,569	10.1	18,200	9.2	3,278	7.9	7,347	19.9
2003	30,136	10.4	18,457	9.3	3,319	8.3	7,566	20.8
2002	30,242	10.5	18,762	9.5	3,143	8.1	7,494	20.8
2001	29,573	10.4	18,676	9.4	3,087	8.3	7,063	19.8
2000	28,663	10.2	18,042	9.1	2,891	8.2	6,958	19.8
1999	28,874	10.3	18,260	9.3	2,878	8.5	6,933	20.0
1998	30,708	11.1	19,365	9.8	3,085	9.5	7,391	21.6
1997	32,436	11.9	19,912	10.2	3,331	10.8	8,264	24.6
1996	34,040	12.6	20,004	10.4	3,638	12.4	8,962	27.3
1995	35,957	13.5	20,764	10.8	4,204	15.0	9,435	29.3
1994	38,505	14.6	21,549	11.3	4,383	16.3	10,986	34.7
1993	39,595	15.2	21,960	11.6	4,399	17.1	11,434	36.8
1992	37,776	14.7	21,137	11.3	4,325	17.6	10,603	34.8
1991	38,317	15.1	21,629	11.6	4,205	17.9	10,678	35.8
1990	37,155	14.9	20,701	11.4	3,762	16.8	8,960	32.1

Continued on next page

All Firearm Deaths, Total and by Race/Ethnicity, 1990-2010 (Cont.)

	American Indian/ Alaskan Native		Asian/Pacific Islander	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year				
2010	293	11.4	383	2.4
2009	268	10.5	413	2.6
2008	256	10.1	382	2.5
2007	228	9.1	419	2.8
2006	264	10.7	459	3.2
2005	285	11.6	432	3.1
2004	261	10.7	381	2.8
2003	259	10.8	428	3.3
2002	271	11.4	417	3.3
2001	221	9.4	381	3.2
2000	226	9.6	411	3.6
1999	247	10.9	437	4.0
1998	261	11.8	442	4.2
1997	261	12.1	503	5.0
1996	223	12.2	475	5.0
1995	258	14.6	559	6.1
1994	277	16.0	549	6.3
1993	242	14.4	585	7.0
1992	199	12.2	501	6.3
1991	245	15.4	514	6.9
1990	222	14.4	401	5.7

Notes: Hispanics are of any race. White, black, American Indian/Alaskan Native, and Asian/Pacific Islander include only non-Hispanics. Data on Hispanic Origin were not gathered prior to 1990. Firearm deaths include those that are unintentional, violence-related (suicide, homicide and legal intervention) and of undetermined intent.

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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Firearm Homicide Deaths, Total and by Gender, 1981-2010

	All		Male		Female	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	11,078	3.6	9,340	6.2	1,738	1.1
2009	11,493	3.7	9,615	6.4	1,878	1.2
2008	12,179	4.0	10,361	6.9	1,818	1.2
2007	12,632	4.2	10,767	7.3	1,865	1.2
2006	12,791	4.3	10,886	7.4	1,905	1.3
2005	12,352	4.2	10,561	7.3	1,791	1.2
2004	11,624	4.0	9,921	6.9	1,703	1.1
2003	11,920	4.1	10,126	7.1	1,794	1.2
2002	11,829	4.1	9,899	7.0	1,930	1.3
2001	11,348	4.0	9,532	6.8	1,816	1.3
2000	10,801	3.8	9,006	6.5	1,795	1.3
1999	10,828	3.9	8,944	6.5	1,884	1.3
1998	11,798	4.3	9,771	7.2	2,027	1.4
1997	13,252	4.9	11,147	8.4	2,105	1.5
1996	14,037	5.2	11,735	8.9	2,302	1.7
1995	15,551	5.8	13,021	10.0	2,530	1.9
1994	17,527	6.7	14,766	11.5	2,761	2.1
1993	18,253	7.0	15,228	12.0	3,025	2.3
1992	17,488	6.8	14,747	11.8	2,741	2.1
1991	17,746	7.0	14,926	12.1	2,820	2.2
1990	16,218	6.5	13,629	11.2	2,589	2.0
1989	14,464	5.9	12,018	10.0	2,446	1.9
1988	13,645	5.6	11,134	9.3	2,511	2.0
1987	12,657	5.2	10,202	8.6	2,455	2.0
1986	13,029	5.4	10,656	9.1	2,373	1.9
1985	11,836	5.0	9,532	8.2	2,304	1.9
1984	11,815	5.0	9,615	8.4	2,200	1.8
1983	12,040	5.1	9,863	8.7	2,177	1.8
1982	13,830	6.0	11,402	10.1	2,428	2.0
1981	15,089	6.6	12,548	11.3	2,541	2.2

Note: There were 11,101 firearm homicide deaths in 2011 and the rate of 3.6 per 100,000 people remained the same, according to preliminary Centers for Disease Control data.

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

PEW RESEARCH CENTER

Firearm Homicide Deaths, by Age, 1981-2010

	-----Younger than 12-----		--------Ages 12-17--------		--------Ages 18-24--------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	127	0.3	708	2.8	3,273	10.7
2009	142	0.3	745	2.9	3,398	11.1
2008	140	0.3	844	3.3	3,662	12.1
2007	140	0.3	898	3.5	3,895	13.1
2006	142	0.3	940	3.6	4,030	13.6
2005	111	0.2	810	3.1	3,808	12.9
2004	105	0.2	763	3.0	3,485	11.9
2003	121	0.3	684	2.7	3,840	13.3
2002	151	0.3	721	2.9	3,708	13.0
2001	150	0.3	685	2.8	3,611	12.9
2000	110	0.2	709	2.9	3,371	12.4
1999	142	0.3	859	3.6	3,319	12.4
1998	157	0.3	888	3.7	3,753	14.4
1997	174	0.4	1,134	4.8	4,148	16.3
1996	178	0.4	1,295	5.6	4,334	17.2
1995	183	0.4	1,597	7.0	4,726	18.6
1994	176	0.4	1,736	7.8	5,435	21.2
1993	240	0.5	1,735	8.0	5,673	21.8
1992	182	0.4	1,599	7.6	5,402	20.7
1991	167	0.4	1,509	7.4	5,386	20.4
1990	174	0.4	1,297	6.5	4,598	17.1
1989	197	0.5	1,078	5.4	3,837	14.1
1988	176	0.4	864	4.2	3,471	12.7
1987	139	0.3	704	3.4	3,181	11.5
1986	131	0.3	653	3.1	3,195	11.3
1985	149	0.4	553	2.6	2,673	9.2
1984	156	0.4	511	2.3	2,744	9.3
1983	122	0.3	503	2.3	2,775	9.3
1982	158	0.4	587	2.6	3,211	10.6
1981	149	0.4	662	2.9	3,668	12.1

Continued on next page

Firearm Homicide Deaths, by Age, 1981-2010 (Cont.)

	--------Ages 25-40--------		--------Ages 41-64--------		--------65 and older--------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	4,422	6.7	2,212	2.3	331	0.8
2009	4,564	7.0	2,277	2.3	361	0.9
2008	4,913	7.5	2,300	2.4	318	0.8
2007	5,048	7.8	2,346	2.5	296	0.8
2006	5,063	7.8	2,344	2.5	264	0.7
2005	5,047	7.8	2,245	2.5	322	0.9
2004	4,718	7.3	2,210	2.5	322	0.9
2003	4,797	7.4	2,188	2.5	272	0.8
2002	4,780	7.3	2,161	2.5	295	0.8
2001	4,664	7.0	1,920	2.3	307	0.9
2000	4,335	6.4	1,971	2.5	293	0.8
1999	4,270	6.3	1,912	2.5	311	0.9
1998	4,585	6.7	2,091	2.8	306	0.9
1997	5,183	7.5	2,245	3.1	351	1.0
1996	5,519	8.0	2,313	3.3	382	1.1
1995	6,152	8.9	2,471	3.6	398	1.2
1994	7,105	10.3	2,640	4.0	413	1.2
1993	7,371	10.8	2,743	4.2	465	1.4
1992	7,185	10.5	2,669	4.2	428	1.3
1991	7,432	11.0	2,757	4.5	454	1.4
1990	7,106	10.6	2,548	4.2	455	1.5
1989	6,427	9.7	2,434	4.1	460	1.5
1988	6,347	9.6	2,296	4.0	451	1.5
1987	5,845	8.9	2,280	4.0	478	1.6
1986	6,144	9.6	2,415	4.3	452	1.6
1985	5,525	8.9	2,448	4.4	467	1.6
1984	5,428	8.9	2,520	4.6	432	1.5
1983	5,573	9.4	2,627	4.8	415	1.5
1982	6,334	11.0	2,994	5.5	525	2.0
1981	6,719	12.0	3,373	6.3	493	1.9

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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Firearm Homicide Deaths, Total and by Race/Ethnicity, 1990-2010

	---------All---------		-------White-------		------Hispanic------		-------Black-------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year								
2010	11,078	3.6	2,775	1.4	1,919	3.8	6,051	15.3
2009	11,493	3.7	2,860	1.4	2,115	4.3	6,117	15.6
2008	12,179	4.0	3,117	1.6	2,260	4.7	6,481	16.8
2007	12,632	4.2	3,053	1.5	2,385	5.2	6,867	18.0
2006	12,791	4.3	2,860	1.4	2,472	5.5	7,021	18.6
2005	12,352	4.2	2,871	1.4	2,453	5.7	6,600	17.7
2004	11,624	4.0	2,921	1.5	2,241	5.4	6,119	16.6
2003	11,920	4.1	2,883	1.5	2,316	5.8	6,319	17.3
2002	11,829	4.1	3,052	1.5	2,168	5.6	6,181	17.1
2001	11,348	4.0	3,085	1.6	2,123	5.7	5,790	16.2
2000	10,801	3.8	2,861	1.4	1,958	5.5	5,622	16.0
1999	10,828	3.9	2,995	1.5	1,939	5.7	5,508	15.9
1998	11,798	4.3	3,340	1.7	2,090	6.5	5,957	17.4
1997	13,252	4.9	3,751	1.9	2,298	7.4	6,737	20.0
1996	14,037	5.2	3,631	1.9	2,529	8.6	7,231	22.1
1995	15,551	5.8	4,054	2.1	3,008	10.7	7,765	24.1
1994	17,527	6.7	4,528	2.4	3,149	11.7	9,112	28.8
1993	18,253	7.0	4,566	2.4	3,192	12.4	9,548	30.7
1992	17,488	6.8	4,546	2.4	3,237	13.2	8,899	29.2
1991	17,746	7.0	4,679	2.5	3,103	13.2	9,039	30.3
1990	16,218	6.5	4,191	2.3	2,737	12.2	7,484	26.9

Continued on next page

Firearm Homicide Deaths, Total and by Race/Ethnicity, 1990-2010 (Cont.)

	American Indian/ Alaskan Native		Asian/Pacific Islander	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year				
2010	101	3.9	155	1.0
2009	99	3.9	199	1.3
2008	86	3.4	198	1.3
2007	83	3.3	190	1.3
2006	109	4.4	270	1.9
2005	106	4.3	258	1.9
2004	96	4.0	187	1.4
2003	101	4.2	233	1.8
2002	109	4.6	233	1.9
2001	78	3.3	181	1.5
2000	80	3.4	204	1.8
1999	94	4.1	224	2.0
1998	91	4.1	232	2.2
1997	91	4.2	289	2.9
1996	74	4.1	293	3.1
1995	107	6.0	334	3.7
1994	107	6.2	318	3.6
1993	91	5.4	392	4.7
1992	79	4.8	313	4.0
1991	92	5.8	340	4.6
1990	70	4.6	245	3.5

Notes: Hispanics are of any race. White, black, American Indian/Alaskan Native, and Asian/Pacific Islander include only non-Hispanics. Data on Hispanic origin were not gathered prior to 1990.

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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Firearm Suicide Deaths, Total and by Gender, 1981-2010

	All		Male		Female	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	19,392	6.3	16,962	11.2	2,430	1.5
2009	18,735	6.1	16,307	10.8	2,428	1.6
2008	18,223	6.0	15,931	10.7	2,292	1.5
2007	17,352	5.8	15,181	10.3	2,171	1.4
2006	16,883	5.7	14,734	10.0	2,149	1.4
2005	17,002	5.8	14,916	10.3	2,086	1.4
2004	16,750	5.7	14,523	10.1	2,227	1.5
2003	16,907	5.8	14,827	10.4	2,080	1.4
2002	17,108	5.9	15,045	10.7	2,063	1.4
2001	16,869	5.9	14,758	10.5	2,111	1.5
2000	16,586	5.9	14,454	10.5	2,132	1.5
1999	16,599	5.9	14,479	10.6	2,120	1.5
1998	17,424	6.3	15,104	11.2	2,320	1.6
1997	17,566	6.4	15,194	11.4	2,372	1.7
1996	18,166	6.7	15,808	12.0	2,358	1.7
1995	18,503	6.9	16,060	12.3	2,443	1.8
1994	18,765	7.1	16,287	12.7	2,478	1.8
1993	18,940	7.3	16,381	12.9	2,559	1.9
1992	18,169	7.1	15,802	12.6	2,367	1.8
1991	18,526	7.3	16,120	13.1	2,406	1.9
1990	18,885	7.6	16,285	13.4	2,600	2.0
1989	18,178	7.4	15,680	13.0	2,498	2.0
1988	18,169	7.4	15,656	13.1	2,513	2.0
1987	18,136	7.5	15,539	13.2	2,597	2.1
1986	18,153	7.6	15,518	13.3	2,635	2.1
1985	17,363	7.3	14,809	12.8	2,554	2.1
1984	17,113	7.3	14,504	12.6	2,609	2.2
1983	16,600	7.1	13,959	12.3	2,641	2.2
1982	16,560	7.1	13,872	12.3	2,688	2.3
1981	16,139	7.0	13,378	12.0	2,761	2.3

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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Firearm Suicide Deaths, by Age, 1981-2010

	-----Younger than 12-----		--------Ages 12-17--------		--------Ages 18-24--------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	4	0.0	371	1.5	1,752	5.7
2009	0	0.0	401	1.6	1,665	5.5
2008	3	0.0	358	1.4	1,698	5.6
2007	2	0.0	323	1.2	1,628	5.5
2006	5	0.0	366	1.4	1,669	5.6
2005	6	0.0	406	1.6	1,634	5.5
2004	1	0.0	383	1.5	1,779	6.1
2003	5	0.0	372	1.5	1,772	6.1
2002	4	0.0	419	1.7	1,751	6.1
2001	2	0.0	449	1.8	1,769	6.3
2000	6	0.0	531	2.2	1,840	6.8
1999	6	0.0	552	2.3	1,860	7.0
1998	7	0.0	641	2.7	2,016	7.7
1997	7	0.0	672	2.9	2,035	8.0
1996	16	0.0	704	3.0	2,166	8.6
1995	9	0.0	827	3.6	2,416	9.5
1994	12	0.0	890	4.0	2,630	10.2
1993	8	0.0	824	3.8	2,568	9.9
1992	10	0.0	811	3.9	2,427	9.3
1991	7	0.0	781	3.8	2,477	9.4
1990	11	0.0	747	3.7	2,551	9.5
1989	13	0.0	703	3.5	2,439	9.0
1988	7	0.0	758	3.7	2,376	8.7
1987	10	0.0	710	3.4	2,354	8.5
1986	9	0.0	709	3.3	2,521	8.9
1985	8	0.0	688	3.2	2,524	8.7
1984	7	0.0	565	2.6	2,512	8.5
1983	7	0.0	567	2.6	2,511	8.4
1982	11	0.0	551	2.5	2,690	8.9
1981	4	0.0	572	2.5	2,764	9.1

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Firearm Suicide Deaths, by Age, 1981-2010 (Cont.)

	--------Ages 25-40--------		--------Ages 41-64--------		--------65 and older--------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year						
2010	4,258	6.5	8,729	8.9	4,276	10.6
2009	4,004	6.1	8,415	8.7	4,248	10.7
2008	3,932	6.0	8,089	8.4	4,143	10.7
2007	3,859	6.0	7,643	8.1	3,895	10.3
2006	3,725	5.8	7,289	7.8	3,828	10.3
2005	3,787	5.9	7,279	8.0	3,889	10.6
2004	3,834	5.9	6,994	7.8	3,756	10.4
2003	3,962	6.1	6,942	8.0	3,854	10.7
2002	4,204	6.4	6,722	7.9	4,006	11.3
2001	4,315	6.5	6,385	7.7	3,943	11.2
2000	4,334	6.4	6,001	7.5	3,869	11.1
1999	4,576	6.8	5,679	7.3	3,921	11.3
1998	4,806	7.0	5,837	7.7	4,113	11.9
1997	5,090	7.4	5,747	7.9	4,008	11.7
1996	5,262	7.6	5,824	8.2	4,184	12.3
1995	5,457	7.9	5,530	8.1	4,258	12.6
1994	5,574	8.1	5,462	8.2	4,191	12.6
1993	5,610	8.2	5,625	8.7	4,301	13.1
1992	5,284	7.7	5,402	8.5	4,233	13.1
1991	5,519	8.2	5,406	8.8	4,329	13.6
1990	5,693	8.5	5,481	9.1	4,396	14.1
1989	5,487	8.3	5,288	8.9	4,247	13.8
1988	5,551	8.4	5,207	9.0	4,264	14.2
1987	5,380	8.2	5,386	9.5	4,294	14.5
1986	5,326	8.3	5,441	9.7	4,143	14.3
1985	5,086	8.2	5,242	9.4	3,813	13.4
1984	5,151	8.5	5,282	9.6	3,590	12.9
1983	5,056	8.5	5,088	9.3	3,366	12.3
1982	5,044	8.7	5,138	9.5	3,120	11.6
1981	5,032	9.0	5,027	9.3	2,734	10.4

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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Firearm Suicide Deaths, Total and by Race/Ethnicity, 1990-2010

	---------All---------		-------White-------		------Hispanic------		-------Black-------	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year								
2010	19,392	6.3	16,928	8.5	962	1.9	1,057	2.7
2009	18,735	6.1	16,351	8.2	955	1.9	1,024	2.6
2008	18,223	6.0	15,968	8.0	863	1.8	1,034	2.7
2007	17,352	5.8	15,073	7.6	931	2.0	975	2.6
2006	16,883	5.7	14,721	7.4	817	1.8	994	2.6
2005	17,002	5.8	14,829	7.5	824	1.9	997	2.7
2004	16,750	5.7	14,507	7.3	888	2.1	995	2.7
2003	16,907	5.8	14,737	7.4	835	2.1	993	2.7
2002	17,108	5.9	14,865	7.5	834	2.2	1,041	2.9
2001	16,869	5.9	14,648	7.4	798	2.1	1,069	3.0
2000	16,586	5.9	14,333	7.3	813	2.3	1,073	3.1
1999	16,599	5.9	14,316	7.3	794	2.3	1,112	3.2
1998	17,424	6.3	15,081	7.7	840	2.6	1,098	3.2
1997	17,566	6.4	15,113	7.7	850	2.8	1,189	3.5
1996	18,166	6.7	15,240	7.9	923	3.1	1,288	3.9
1995	18,503	6.9	15,509	8.1	983	3.5	1,274	4.0
1994	18,765	7.1	15,653	8.2	1,021	3.8	1,353	4.3
1993	18,940	7.3	15,904	8.4	982	3.8	1,323	4.3
1992	18,169	7.1	15,249	8.1	880	3.6	1,245	4.1
1991	18,526	7.3	15,636	8.4	906	3.9	1,205	4.0
1990	18,885	7.6	15,274	8.4	840	3.8	1,113	4.0

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Firearm Suicide Deaths, Total and by Race/Ethnicity, 1990-2010 (Cont.)

	American Indian/ Alaskan Native		Asian/Pacific Islander	
	Number	Rate *(per 100,000)*	Number	Rate *(per 100,000)*
Year				
2010	169	6.6	211	1.3
2009	151	5.9	199	1.3
2008	144	5.7	172	1.1
2007	126	5.0	212	1.4
2006	139	5.6	170	1.2
2005	155	6.3	143	1.0
2004	143	5.9	178	1.3
2003	125	5.2	180	1.4
2002	140	5.9	167	1.3
2001	124	5.3	179	1.5
2000	126	5.4	185	1.6
1999	128	5.6	199	1.8
1998	143	6.5	196	1.9
1997	143	6.6	194	1.9
1996	126	6.9	170	1.8
1995	119	6.7	197	2.2
1994	140	8.1	204	2.3
1993	123	7.3	162	1.9
1992	92	5.6	163	2.1
1991	112	7.1	161	2.2
1990	120	7.8	136	1.9

Notes: Hispanics are of any race. White, black, American Indian/Alaskan Native, and Asian/Pacific Islander include only non-Hispanics. Data on Hispanic origin were not gathered prior to 1990.

Source: Pew Research Center tabulations of CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

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APPENDIX 2: ADDITIONAL TABLES ON NON-FATAL VIOLENT FIREARM CRIMES

Non-fatal Firearm Crimes, Total and by Gender, 1993-2011

Victimizations among people ages 12 and older

	All		Male		Female	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year						
2011	467	181.5	264	209.3	203	154.7
2010	415	162.1	207	166.0	208	158.5
2009	410	161.4	292	235.3	118	90.9
2008	371	147.2	208	169.2	163	126.2
2007	555	221.6	334	273.8	220	171.9
2006	614	248.5	344	285.7	270	213.2
2005	504	205.9	330	277.3	174	138.4
2004	457	188.9	269	228.9	188	151.0
2003	467	195.3	319	275.0	148	120.2
2002	540	233.2	298	265.2	242	203.0
2001	563	245.7	344	309.6	219	185.5
2000	610	269.1	434	395.2	176	150.6
1999	641	285.4	382	352.0	259	223.0
1998	835	376.5	563	522.9	273	238.8
1997	1,024	465.8	617	579.3	407	359.0
1996	1,101	506.7	728	692.8	373	332.5
1995	1,193	554.8	867	834.1	326	293.6
1994	1,568	735.8	1,066	1,034.2	502	456.2
1993	1,530	725.3	1,008	987.4	522	479.5

Notes: 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Includes aggravated assault, robbery and sex crimes committed with a firearm.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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Non-fatal Firearm Crimes, Total and by Age, 1993-2011

Victimizations among people ages 12 and older

	All		Ages 12-17		Ages 18-24	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year						
2011	467	181.5	58	238.7	102	341.8
2010	415	162.1	*11	*44.2	206	689.6
2009	410	161.4	*17	*69.0	141	478.4
2008	371	147.2	*29	*116.0	89	305.3
2007	555	221.6	*149	*585.5	100	342.6
2006	614	248.5	68	268.5	164	577.7
2005	504	205.9	*46	*182.5	154	539.7
2004	457	188.9	*15	*58.9	97	343.4
2003	467	195.3	81	323.3	123	441.4
2002	540	233.2	59	238.8	224	817.0
2001	563	245.7	58	240.2	175	643.4
2000	610	269.1	49	205.5	190	714.3
1999	641	285.4	104	433.4	176	676.5
1998	835	376.5	118	500.7	281	1,105.9
1997	1,024	465.8	148	629.7	344	1,372.4
1996	1,101	506.7	183	787.9	291	1,176.7
1995	1,193	554.8	167	729.9	320	1,279.4
1994	1,568	735.8	275	1,228.0	494	1,940.9
1993	1,530	725.3	229	1,046.5	434	1,689.7

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Non-fatal Firearm Crimes, Total and by Age, 1993-2011 (Cont.)

Victimizations among people ages 12 and older

	--------Ages 25-40--------		--------Ages 41-64--------		--------65 and older--------	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year						
2011	166	252.5	126	128.5	*16	*39.1
2010	101	153.3	87	89.3	*10	*27.0
2009	126	191.3	121	125.8	*6	*14.5
2008	136	206.8	105	110.7	*12	*31.3
2007	189	287.5	115	122.2	*3	*7.3
2006	188	288.7	170	183.3	*24	*66.7
2005	187	289.0	101	111.8	*14	*41.2
2004	178	273.0	164	185.8	*2	*6.8
2003	139	211.1	119	138.4	*5	*13.9
2002	145	229.4	99	119.8	*12	*37.4
2001	186	289.6	131	162.3	*13	*40.2
2000	195	301.0	158	200.7	*18	*54.3
1999	253	385.5	90	118.2	*18	*54.2
1998	270	406.5	161	217.3	*5	*14.5
1997	319	474.0	189	262.2	*24	*76.5
1996	422	623.1	184	263.7	*20	*63.7
1995	448	659.3	237	350.0	*21	*67.2
1994	494	726.0	260	392.7	45	145.9
1993	595	871.8	257	399.2	*14	*47.0

Notes: *Interpret with caution. Estimate based on 10 or fewer sample cases. Figures are not available for people younger than 12. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Includes aggravated assault, robbery and sex crimes committed with a firearm.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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Non-fatal Firearm Crimes, Total and by Race/Ethnicity, 1993-2011

Victimizations among people ages 12 and older

	All		White		Hispanic		Black		Other	
	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)
Year										
2011	467	181.5	274	158.7	81	215.0	76	245.5	37	223.7
2010	415	162.1	195	112.0	82	229.9	96	315.8	*42	*263.4
2009	410	161.4	151	87.0	70	198.6	172	579.6	*17	*110.4
2008	371	147.2	179	102.9	50	144.4	125	434.7	*17	*114.1
2007	555	221.6	176	102.3	79	228.2	272	948.3	*29	*188.1
2006	614	248.5	317	183.4	121	388.2	134	468.0	*43	*293.8
2005	504	205.9	274	159.6	90	284.8	117	418.2	*23	*170.0
2004	457	188.9	281	165.2	45	147.0	118	424.8	*12	*94.4
2003	467	195.3	280	165.1	49	162.2	126	464.2	*12	*96.8
2002	540	233.2	241	144.3	100	371.8	192	677.3	*7	*72.1
2001	563	245.7	337	202.3	93	366.4	123	441.1	*10	*108.2
2000	610	269.1	343	206.8	96	390.7	156	568.0	*16	*175.2
1999	641	285.4	269	162.5	125	544.6	223	824.7	*24	*262.8
1998	835	376.5	447	271.3	100	461.5	201	755.5	87	995.0
1997	1,024	465.8	683	416.0	138	654.0	190	724.5	*13	*152.8
1996	1,101	506.7	635	388.1	148	723.2	295	1,164.4	*23	*291.3
1995	1,193	554.8	631	387.3	224	1,155.4	289	1,145.6	50	659.1
1994	1,568	735.8	864	532.5	233	1,258.3	424	1,689.2	47	649.4
1993	1,530	725.3	808	499.1	220	1,286.8	389	1,570.0	113	1,572.9

Notes: *Interpret with caution. Estimate based on 10 or fewer sample cases. Hispanics are of any race. White, black and "other" include only non-Hispanics. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Includes aggravated assault, robbery and sex crimes committed with a firearm.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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Non-fatal Firearm Crimes, Total and by Type of Crime, 1993-2011

Victimizations among people ages 12 and older

	---------All---------		--Aggravated assault--		--------Robbery--------		------Sex crimes------	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year								
2011	467	181.5	322	124.9	143	55.5	*3	*1.0
2010	415	162.1	218	85.2	141	54.9	*56	*22.0
2009	410	161.4	239	93.9	172	67.5	---	---
2008	371	147.2	238	94.4	133	52.8	---	---
2007	555	221.6	397	158.5	155	61.9	*3	*1.1
2006	614	248.5	427	172.7	154	62.5	*33	*13.4
2005	504	205.9	330	134.9	168	68.7	*6	*2.4
2004	457	188.9	335	138.6	122	50.3	---	---
2003	467	195.3	302	126.4	159	66.4	*6	*2.4
2002	540	233.2	382	165.1	146	63.1	*11	*4.9
2001	563	245.7	360	157.2	197	86.0	*6	*2.4
2000	610	269.1	417	183.7	187	82.5	*7	*2.9
1999	641	285.4	440	196.0	195	87.0	*6	*2.5
1998	835	376.5	615	277.1	195	87.9	*26	*11.6
1997	1,024	465.8	781	355.1	236	107.4	*7	*3.3
1996	1,101	506.7	738	339.8	351	161.4	*12	*5.5
1995	1,193	554.8	810	376.4	368	171.1	*15	*7.2
1994	1,568	735.8	1,089	510.8	453	212.8	*26	*12.2
1993	1,530	725.3	1,068	506.4	390	185.1	71	33.8

Notes: *Interpret with caution. Estimate based on 10 or fewer sample cases. "---" means no cases available. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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APPENDIX 3: ADDITIONAL TABLES ON ALL NON-FATAL VIOLENT CRIMES

All Non-fatal Violent Crimes, Total and by Gender, 1993-2011

Victimizations among people ages 12 and older

	All		Male		Female	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year						
2011	5,805	2,254.2	3,206	2,542.6	2,599	1,977.5
2010	4,936	1,928.4	2,511	2,008.6	2,425	1,851.9
2009	5,669	2,231.1	2,760	2,225.4	2,909	2,236.4
2008	6,393	2,534.7	3,317	2,694.9	3,077	2,382.0
2007	6,814	2,721.9	3,751	3,071.1	3,064	2,389.3
2006	8,430	3,409.9	4,482	3,720.5	3,949	3,114.8
2005	6,948	2,841.6	4,044	3,399.5	2,904	2,313.0
2004	6,726	2,782.8	3,553	3,024.6	3,173	2,554.1
2003	7,679	3,208.9	4,014	3,459.5	3,665	2,972.9
2002	7,425	3,205.9	3,756	3,346.5	3,668	3,073.7
2001	7,477	3,261.8	3,828	3,446.6	3,648	3,088.1
2000	8,503	3,748.9	4,809	4,379.0	3,694	3,157.4
1999	10,601	4,720.5	5,486	5,049.0	5,115	4,412.5
1998	12,011	5,413.1	6,835	6,352.5	5,176	4,528.6
1997	13,425	6,106.9	7,198	6,752.9	6,227	5,498.9
1996	14,060	6,472.1	7,860	7,482.3	6,199	5,526.0
1995	15,202	7,068.1	8,657	8,329.0	6,545	5,889.0
1994	17,059	8,003.8	9,522	9,236.5	7,537	6,848.9
1993	16,823	7,976.3	9,891	9,690.1	6,932	6,369.0

Notes: 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Includes aggravated and simple assault, robbery and sex crimes, committed with and without a firearm.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

PEW RESEARCH CENTER

All Non-fatal Violent Crimes, Total and by Age, 1993-2011

Victimizations among people ages 12 and older

	All		Ages 12-17		Ages 18-24	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year						
2011	5,805	2,254.2	915	3,765.2	1,460	4,903.4
2010	4,936	1,928.4	688	2,813.6	1,012	3,388.5
2009	5,669	2,231.1	1,059	4,295.9	1,131	3,846.9
2008	6,393	2,534.7	1,360	5,434.4	1,261	4,317.0
2007	6,814	2,721.9	1,571	6,182.9	1,356	4,661.4
2006	8,430	3,409.9	1,485	5,825.9	1,852	6,506.7
2005	6,948	2,841.6	1,518	5,978.0	1,741	6,095.4
2004	6,726	2,782.8	1,254	4,965.5	1,571	5,541.2
2003	7,679	3,208.9	1,974	7,831.0	1,779	6,382.8
2002	7,425	3,205.9	1,554	6,272.3	1,876	6,851.2
2001	7,477	3,261.8	1,802	7,442.5	1,607	5,919.8
2000	8,503	3,748.9	1,757	7,316.8	1,999	7,501.2
1999	10,601	4,720.5	2,596	10,865.5	2,313	8,886.8
1998	12,011	5,413.1	2,816	11,906.0	2,853	11,224.8
1997	13,425	6,106.9	3,189	13,549.6	2,756	10,998.8
1996	14,060	6,472.1	3,410	14,678.8	3,038	12,268.7
1995	15,202	7,068.1	3,578	15,626.3	3,386	13,538.2
1994	17,059	8,003.8	4,246	18,932.8	3,667	14,420.4
1993	16,823	7,976.3	4,043	18,480.4	3,642	14,163.3

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All Non-fatal Violent Crimes, Total and by Age, 1993-2011 (Cont.)

Victimizations among people ages 12 and older

	--------Ages 25-40--------		--------Ages 41-64--------		--------65 and older--------	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year						
2011	1,731	2,628.6	1,523	1,555.5	176	443.8
2010	1,784	2,700.2	1,337	1,379.6	116	299.3
2009	1,822	2,768.2	1,514	1,573.7	143	375.6
2008	1,956	2,968.1	1,691	1,780.2	125	337.3
2007	2,061	3,137.3	1,718	1,828.3	109	299.8
2006	2,938	4,510.9	2,012	2,173.5	143	402.6
2005	1,854	2,862.2	1,708	1,883.3	127	360.9
2004	2,008	3,085.9	1,807	2,043.0	86	249.1
2003	2,082	3,168.1	1,738	2,015.1	106	310.0
2002	2,307	3,644.2	1,562	1,880.7	126	379.6
2001	2,128	3,312.7	1,755	2,172.6	185	563.3
2000	2,738	4,226.3	1,887	2,398.7	122	373.6
1999	3,293	5,011.2	2,242	2,932.5	157	483.9
1998	3,731	5,617.0	2,501	3,369.5	111	344.0
1997	4,713	7,010.2	2,593	3,600.5	174	544.4
1996	5,240	7,728.3	2,162	3,101.3	211	664.1
1995	5,617	8,271.9	2,406	3,549.9	215	681.4
1994	6,209	9,122.5	2,707	4,091.0	230	740.7
1993	6,093	8,927.4	2,816	4,374.1	230	748.5

Notes: Figures are not available for people younger than 12. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Includes aggravated and simple assault, robbery and sex crimes, committed with and without a firearm.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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All Non-fatal Violent Crimes, Total and by Race/Ethnicity, 1993-2011

Victimizations among people ages 12 and older

	All		White		Hispanic		Black		Other	
	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)	Number (in thousands)	Rate (per 100,000)
Year										
2011	5,805	2,254.2	3,715	2,152.4	895	2,384.3	811	2,636.4	384	2,309.3
2010	4,936	1,928.4	3,182	1,831.6	604	1,684.9	787	2,590.7	363	2,268.0
2009	5,669	2,231.1	3,737	2,151.8	786	2,220.7	905	3,056.4	241	1,563.3
2008	6,393	2,534.7	4,499	2,592.2	702	2,033.0	823	2,852.8	370	2,413.8
2007	6,814	2,721.9	4,607	2,676.5	772	2,242.1	998	3,485.2	438	2,885.2
2006	8,430	3,409.9	5,486	3,171.2	1,005	3,228.0	1,294	4,533.6	645	4,432.8
2005	6,948	2,841.6	4,751	2,772.5	822	2,587.1	913	3,271.9	462	3,429.1
2004	6,726	2,782.8	4,849	2,846.6	621	2,012.5	837	3,021.6	419	3,275.6
2003	7,679	3,208.9	5,490	3,232.3	805	2,657.6	976	3,586.0	409	3,412.9
2002	7,425	3,205.9	5,433	3,257.3	808	2,994.9	1,024	3,609.5	160	1,690.3
2001	7,477	3,261.8	5,159	3,095.5	1,048	4,118.1	993	3,570.3	277	2,979.0
2000	8,503	3,748.9	6,220	3,754.6	984	4,016.0	1,096	3,998.4	202	2,191.4
1999	10,601	4,720.5	7,880	4,765.4	950	4,138.2	1,524	5,638.1	245	2,669.1
1998	12,011	5,413.1	9,044	5,486.9	1,016	4,680.4	1,420	5,338.2	532	6,066.2
1997	13,425	6,106.9	10,001	6,094.8	1,190	5,623.2	1,911	7,273.3	324	3,894.6
1996	14,060	6,472.1	10,491	6,414.4	1,405	6,855.0	1,768	6,981.1	395	5,030.0
1995	15,202	7,068.1	11,144	6,838.9	1,605	8,291.2	1,985	7,881.6	467	6,168.0
1994	17,059	8,003.8	12,748	7,857.3	1,700	9,188.6	2,112	8,415.8	498	6,838.5
1993	16,823	7,976.3	12,738	7,869.6	1,371	8,019.1	2,231	9,002.4	484	6,738.9

Notes: Hispanics are of any race. White, black and "other" include only non-Hispanics. 2006 NCVS estimates are not comparable with those in other years. See Methodology for details. Includes aggravated and simple assault, robbery and sex crimes, committed with and without a firearm.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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All Non-fatal Violent Crimes, Total and by Type of Crime, 1993-2011

Victimizations among people ages 12 and older

	---------All---------		---Aggravated--- -----assault-----		--Simple assault--		-----Robbery-----		----Sex crimes----	
	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*	Number *(in thousands)*	Rate *(per 100,000)*
Year										
2011	5,805	2,254.2	1,052	408.5	3,953	1,534.8	557	216.2	244	94.7
2010	4,936	1,928.4	858	335.1	3,241	1,266.3	569	222.1	269	104.9
2009	5,669	2,231.1	1,029	405.1	3,699	1,455.8	635	249.9	306	120.3
2008	6,393	2,534.7	969	384.2	4,395	1,742.3	680	269.5	350	138.6
2007	6,814	2,721.9	1,219	486.9	4,571	1,826.1	776	309.8	248	99.2
2006	8,430	3,409.9	1,754	709.4	5,281	2,135.9	932	377.1	464	187.5
2005	6,948	2,841.6	1,281	524.1	4,689	1,917.9	769	314.6	208	85.0
2004	6,726	2,782.8	1,419	586.9	4,435	1,835.0	616	255.0	256	105.8
2003	7,679	3,208.9	1,362	569.3	5,283	2,207.7	708	296.0	325	135.9
2002	7,425	3,205.9	1,333	575.4	5,118	2,209.9	624	269.6	350	151.0
2001	7,477	3,261.8	1,384	603.7	4,949	2,158.9	668	291.3	477	207.9
2000	8,503	3,748.9	1,565	689.9	5,685	2,506.6	886	390.7	367	161.7
1999	10,601	4,720.5	1,962	873.6	7,028	3,129.7	1,019	453.8	591	263.4
1998	12,011	5,413.1	2,318	1,044.9	8,330	3,754.4	971	437.5	391	176.3
1997	13,425	6,106.9	2,895	1,317.0	8,788	3,997.3	1,189	540.8	554	251.8
1996	14,060	6,472.1	2,877	1,324.5	9,320	4,290.1	1,425	656.2	437	201.3
1995	15,202	7,068.1	2,894	1,345.7	10,394	4,832.6	1,351	627.9	563	261.9
1994	17,059	8,003.8	3,413	1,601.3	11,296	5,299.9	1,676	786.3	674	316.4
1993	16,823	7,976.3	3,481	1,650.5	10,691	5,068.9	1,753	831.0	898	425.9

Notes: 2006 NCVS estimates are not comparable with those in other years. See Methodology for details.

Source: Pew Research Center tabulations of National Crime Victimization Survey, U.S. Justice Department

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APPENDIX 4: METHODOLOGY

Data on Homicides, Suicides and Other Deaths and Data on Firearms Injuries

The Web-based Injury Statistics Query and Reporting System (WISQARS) is the primary source for data on deaths, homicides and suicides. WISQARS is part of the National Center for Injury Prevention and Control in the Centers for Disease Control and Prevention (CDC) and can be accessed at www.cdc.gov/ncipc/wisqars. It is also the primary source for data on non-fatal firearms related injuries.

WISQARS data on deaths are drawn from information contained in death certificates filed in state vital statistics offices. This information includes causes of death reported by attending physicians, medical examiners and coroners, including deaths due to firearms. The data also include demographic information about the deceased reported by funeral directors, who obtain that information from family members and other informants. Data on the annual number of deaths used in this report are drawn from WISQARS for 1981 through 2011.

WISQARS data on non-fatal firearms injuries come from the National Electronic Injury Surveillance System–All Injury Program (NEISS-AIP), a collaborative operation of the CDC's National Center for Injury Prevention and Control (NCIPC) and the U.S. Consumer Product Safety Commission. Information is collected from a sample of hospital emergency rooms that represent a range of hospital types and locations. Data on non-fatal injuries can be accessed at http://www.cdc.gov/ncipc/wisqars/nonfatal/datasources.htm.

For this report, homicides are defined as fatal injuries inflicted by another person with intent to injure or kill. Note that deaths due to legal intervention or operations or deaths due to war are excluded. Justifiable homicide is not identified in the WISQARS data.

Calculating Annual Death Rates

Throughout this report, annual death rates per 100,000 people are shown based on data provided by WISQARS. The annual death rate is calculated as follows:

$$Annual\ death\ rate = \left[\frac{(number\ of\ deaths\ in\ a\ year)}{(year's\ population\ estimate)}\right] \times [100{,}000]$$

WISQARS provides the number of deaths in a given year. Population data, used in constructing rates, come from the Census Bureau's annual population estimates. For 1990 through 2011, population estimates were obtained via WISQARS. For 1981 through 1989, population estimates were obtained from the Census Bureau through http://www.census.gov/popest/data/national/asrh/1980s/80s_nat_detail.html.

Data on Criminal Victimizations

Crime victimization estimates are drawn from the National Crime Victimization Survey (NCVS) of the Bureau of Justice Statistics (BJS). The NCVS provides national estimates of the levels and characteristics of criminal victimization in the U.S., including crimes not reported to police departments. The NCVS is an annual survey of some 140,000 persons ages 12 and older in about 80,000 households. A household that is selected participates in the NCVS for three years, with survey respondents interviewed every six months. In addition to persons living in households, the survey includes persons living in group quarters such as dormitories but excludes persons living in institutional settings such as military barracks, mental hospitals, or correctional facilities. The survey also excludes persons who are homeless or visiting from abroad.

The NCVS has been conducted annually since 1972 and is the primary source of information on crime victimizations in the U.S. NCVS respondents are asked about non-fatal personal crime victimizations such as rape, sexual assault, robbery, aggravated assault, simple assault and personal larceny. Respondents are also asked about household property crime victimizations such as burglary, motor vehicle theft and other thefts. Survey respondents who have been victims of a crime are then asked about details related to the crime, including whether the offender had a weapon, such as a gun. Fatal crimes such as homicides are not included in the NCVS. Respondent demographic characteristics are also collected.

NCVS data collection began in 1972. This report uses data collected from 1993, the first year employing an intensive methodological redesign, through 2011. In addition, analysis of crime victimizations is limited to those that occurred in the U.S. and criminal victimizations that occurred in a single data collection year.

This report analyzes victimizations and not incidents; more than one person may be victimized by a single incident.

Criminal Victimization Statistics and Measures

Most statistics based on the NCVS were obtained using the BJS's online NCVS Victimization Analysis Tool (NVAT). The NVAT can be accessed through http://bjs.gov/index.cfm?ty=nvat. The BJS also provided the Pew Research Center with a single data file containing concatenated incident data files from the 1993 through 2011 NCVS data collections. That file was used to tabulate crime victimization statistics for those ages 25 to 40 and ages 41 to 64.

Two measures of victimization based on the NCVS are used in this report—the estimated number of crime victimizations and the estimated crime victimization rate per 100,000 population. These measures are reported for guns, or firearms, non-fatal violent crime victimizations and for all violent crime victimizations. In some cases, crime victimization estimates based a sample size of fewer than 10 cases are reported. These estimates are denoted by an asterisk (*) in the report's appendix tables and should be interpreted with caution. For some demographic subgroups in some years, no crime victimization estimates are provided because of no sample cases were available. These instances are denoted with dashes (---) in the report's appendix tables.

Throughout the report, NCVS data from 2006 are reported but should be interpreted with caution. In 2006, several methodological changes were made to the NCVS data collection that distinguish it from other years (Truman and Planty, 2012).

Counting Series Victimizations

The analysis in this report utilizes the protocol developed by the BJS to analyze series victimizations in the NCVS. A series victimization (or repeat victimization) involves a crime in which a victim finds it difficult to distinguish multiple incidents from each other and provide details of each individual incident. Examples of such crimes include intimate partner violence or bullying by schoolmates.

Since 2012 (Lauritsen, et. al., 2012), the BJS has developed the following protocol for counting series victimizations. Today, the BJS includes series victimizations in its annual estimates of victimization. For any given series victimization over a six-month period, up to 10 incidents are counted as individual criminal victimizations. Prior to 2012, series victimizations were often excluded from BJS victimization estimates.

As a result of this change, which has been incorporated into the data analysis for this report, the number of victimizations estimated in the NCVS for years prior to 2011 is higher than

estimates published prior to 2012. For more details, see *Criminal Victimizations, 2011* (Truman and Planty, 2012).

Testing Statistical Significance

Throughout the report, comparisons of crime victimization rates between demographic subgroups or comparisons of crime rates across years were tested for statistical significance. Since the NCVS has a complex sample design, any tests of statistical significance require taking that complex design into account.

For this report, all statistical tests for the NCVS were conducted using spreadsheets provided by the BJS. These spreadsheets contain formulas for statistical tests that account for the NCVS's complex sample design.

Differences Between the NCVS and the UCR

The NCVS and the FBI's Uniform Crime Report (UCR) data are the two main components of the nation's crime reporting system. However, the two collections differ significantly in methodology and in crime definitions.

The NCVS is a survey of the general public ages 12 and older asking about crime victimizations, including those not reported to police. By comparison, the UCR covers crimes against persons and businesses known to and recorded by law enforcement agencies.

The universe of crimes measured in the NCVS and the UCR differs. For example, the UCR includes homicide, arson, and commercial crimes, while the NCVS does not.

The NCVS does not measure criminal victimizations among children under age 12, persons in institutions such as correctional institutions or nursing homes, homeless people or people from other countries who come to the U.S. for tourism, business or other temporary reasons. Victimizations among these groups may be included in the UCR.

According to the BJS (Truman and Planty, 2012), preliminary estimates from the FBI indicate that violent crimes and property crimes reported by the UCR declined from 2010 to 2011. By contrast, the NCVS reports that over the same period the number of violent crimes and property crimes increased. Even when limiting NCVS victimizations to those reported to police, the number of violent crimes and property crimes remained unchanged between 2010 and 2011.

Public Opinion Survey Methodology

The public opinion survey analysis in this report is based on a telephone survey of 924 adults ages 18 and older conducted March 14-17, 2013, in the continental U.S. Some 512 respondents were interviewed on a landline telephone and 412 were interviewed on a cellular telephone, including 197 who had no landline telephone. The survey was conducted by interviewers at Princeton Data Source and University Survey under the direction of Princeton Survey Research Associates International. Interviews were conducted in English. Respondents in the landline sample were selected by randomly asking for the youngest adult male or female who is now at home. Interviews in the cell sample were conducted with the person who answered the phone, if that person was an adult 18 years of age or older. The survey has a margin of error of plus or minus 3.9 percentage points at the 95% level of confidence.

The combined landline and cell phone sample are weighted using an iterative technique that matches gender, age, education, race, Hispanic origin and region to parameters from the 2011 Census Bureau's American Community Survey and population density to parameters from the Decennial Census. The sample also is weighted to match current patterns of telephone status, based on extrapolations from the 2012 National Health Interview Survey. The weighting procedure also accounts for the fact that respondents with both landline and cell phones have a greater probability of being included in the combined sample and adjusts for household size among respondents with a landline phone. Sampling errors and statistical tests of significance take into account the effect of weighting.

EXHIBIT 44

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Mass Shootings in America: Moving Beyond Newtown

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Abstract

Mass shootings at a Connecticut elementary school, a Colorado movie theater, and other venues have prompted a fair number of proposals for change. Advocates for tighter gun restrictions, for expanding mental health services, for upgrading security in public places, and, even, for controlling violent entertainment have made certain assumptions about the nature of mass murder that are not necessarily valid. This article examines a variety of myths and misconceptions about multiple homicide and mass shooters, pointing out some of the difficult realities in trying to avert these murderous rampages. While many of the policy proposals are worthwhile in general, their prospects for reducing the risk of mass murder are limited.

Keywords

mass murder, subtypes, school shootings, trends, public policy, correlates

Calendar year 2012 offered a rich variety of hot topics for media coverage and public debate. The political campaign season featured an unprecedented number of presidential hopefuls and televised candidate debates, while the year's hurricane season resulted in wide-ranging destruction, primarily from Superstorm Sandy. In addition, the debate over universal health care culminated in the most highly anticipated U.S. Supreme Court ruling in decades.

Nothing, however, surpassed the amount and intensity of interest, at least from a news perspective, than the scourge of mass murder, specifically, a movie theater rampage in Aurora, Colorado, in July and then a public school massacre in Newtown, Connecticut, in mid-December. As one measure of media attention, the Associated Press's year-end poll of news editors placed mass shootings as the leading news story of 2012 (Associated Press, 2012).

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Even before the final death toll from the shooting spree at Newtown's Sandy Hook Elementary School was determined, politicians, pundits, and professors of various disciplines were all over the media, pushing their proposals for change. Some talked about the role of guns, others about access to mental health services, and still more about the need for enhanced security in schools and other public places. Whatever their agenda or the passion behind it, these advocates made certain assumptions concerning patterns in mass murder and the profile of mass killers. Unfortunately, these assumptions were not always consistent with the facts.

Until fairly recently, criminologists had all but ignored the topic of mass murder, and mass shootings in particular (see Bowers, Holmes, & Rhom, 2010; DeLisi & Scherer, 2006; Liwerant, 2007). Some scholars may have regarded mass killing, the murder of four or more victims in a single episode, as merely a special case of criminal homicide, explainable by the same criminological theories applied to single-victim incidents and, therefore, not deserving of special treatment. Other criminologists may have considered mass murder as primarily a matter of psychopathology—a crime perpetrated by individuals who suffer from profound mental disorders (e.g., psychosis) and, therefore, best analyzed through the lens of psychiatry. Finally, some may have assumed that such incidents are not only rare but also aberrational and, therefore, unworthy of significant research attention. More importantly, opportunities for examining mass murder in a systematic fashion have been hindered by limited availability of primary data: Mass murderers are typically deceased, inaccessible for legal reasons, or unwilling or unable to cooperate with research investigators (see Bowers et al., 2010; Fox & Levin, 2003).

Perhaps because of the limited body of systematic research on mass murder, much of the public discourse is grounded in myth and misunderstanding about the nature of the offense and those who perpetrate it. In this article, we attempt to identify and assess a number of these misconceptions that seem to have encouraged policy responses with a slim probability of achieving their desired outcome—eliminating the risk of mass murder.

Myth: Mass Murderers Snap and Kill Indiscriminately

One of the earliest systematic examinations of mass murder incidents challenged the widespread view in the popular press and professional literature that mass murderers are crazed lunatics who suddenly snap, go berserk, and kill indiscriminately (Levin & Fox, 1985). Over the past few decades, moreover, this notion has persisted, at least in the public's mind, in large part because of the selective attention to the most extreme and unusual cases.

However, mass murder rarely involves a sudden explosion of rage. To the contrary, mass killers typically plan their assaults for days, weeks, or months (see, for example, Fox & Levin, 2012; Walkup & Rubin, 2013). These preparations include where, when, and who to kill, as well as with what weapons they will strike. These assailants are deliberate, determined to kill, with little regard for what obstacles are placed in their path.

For example, Dylan Klebold and Eric Harris, the two adolescents responsible for the 1999 Columbine High School massacre, purposely chose Hitler's birthday for their attack (out of admiration for the dictator's power) and spent long hours in the woods fine-tuning their marksmanship skills. They even conceived a grand follow-up plan should they survive the school shooting: to hijack an airplane and fly it into the skyline of New York City (and this was 2 years before the September 11, 2001, acts of terrorism).

The level of detailed planning may help to explain the calm demeanor exhibited by mass murderers, even in the midst of chaos. Witnesses to a mass shooting often report, for example, that the gunman appeared relaxed, even smiling, while killing or injuring dozens of innocent victims (see Aitken, Oosthuizen, Emsley, & Seedat, 2008). Mass murderers have been known to develop and follow a mental script, one that is rehearsed over and over again, to the point where they become comfortable with the mission.

Whatever the style of killing, the motives for mass murder are organized around five primary themes that can occur singly or in combination (Fox & Levin, 1998). Specifically,

1. Revenge (e.g., a deeply disgruntled individual seeks payback for a host of failures in career, school, or personal life);
2. Power (e.g., a "pseudo-commando" style massacre perpetrated by some marginalized individual attempting to wage a personal war against society);
3. Loyalty (e.g., a devoted husband/father kills his entire family and then himself to spare them all from a miserable existence on earth and to reunite them in the hereafter);
4. Terror (e.g., a political dissident destroys government property, with several victims killed as "collateral damage," to send a strong message to those in power); and
5. Profit (e.g., a gunman executes the customers and employees at a retail store to eliminate all witnesses to a robbery).

Among these types, revenge motivation is, by far, the most commonplace (see Knoll, 2010; Leyton, 1986). Mass murderers often see themselves as victims—victims of injustice (Bowers et al., 2010; Palermo, 1997). They seek payback for what they perceive to be unfair treatment by targeting those they hold responsible for their misfortunes. Most often, the ones to be punished are family members (e.g., an unfaithful wife and all her children) or coworkers (e.g., an overbearing boss and all his employees). In such cases, there may be a primary target (which itself can be a place, such as a company, a school, or an agency) while others are killed as surrogates, in what has been termed "murder by proxy" (see Frazier, 1975).

Sometimes, mass murderers target an entire category of people (e.g., women, Jews, immigrants, Whites, Blacks, etc.), constituting a hate crime in the extreme. The victims may be chosen randomly, but the type of victim or the place to find them may not be. In such cases, strangers are punished just because of their class membership or group association.

The rarest form of mass murder is the completely random attack (often in a public place) committed by someone who in his or her paranoid thinking suspects that the whole world is corrupt and unfair (Petee, Padgett, & York, 1997). The level of paranoia may be truly psychotic (e.g., God, the President, or some other powerful entity is behind a wide-ranging conspiracy) or involve a lesser form of paranoid personality disorder in which the perpetrator consistently misconstrues innocent acts or gestures by others as purposely malicious.

Even though most mass murderers deliberately target specific people or places, it is, of course, the seemingly senseless random massacres that are the most frightening to people. After all, they can happen at any place, at any time, and to anyone—usually without warning—and, for this reason, random acts of mass murder, although the least frequent form, receive the most attention by the mass media and the public alike.

Myth: Mass Shootings Are on the Rise

The recent carnages in Newtown, Connecticut; Aurora, Colorado; and elsewhere have compelled many observers to examine the possible reasons behind the rise in mass murder. The New York Times columnist David Brooks noted the number of schizophrenics going untreated (Brooks, 2012). Former President Bill Clinton and other gun-control advocates have pointed to the expiration of the 1994 Federal Assault Weapons Ban as the culprit, while gun-rights proponents have argued that the body counts would be lower were more Americans armed and ready to overtake an active shooter. There is, however, one not-so-tiny flaw in all the various theories and speculations for the presumed increase in mass shootings: Mass shootings have not increased in number or in overall death toll, at least not over the past several decades.

The moral panic and sense of urgency surrounding mass murder have been fueled by various claims that mass murders, and mass shootings in particular, are reaching epidemic proportions. For example, the Mother Jones news organization, having assembled a database of public mass shootings from 1982 through 2012, has reported a recent surge in incidents and fatalities, including a spike and record number of casualties in the year 2012 (Follman, Pan, & Aronsen, 2013).

It is critical to note that Mother Jones did not include all mass shootings in their analysis but instead attempted to delineate those that were senseless, random, or at least public in nature. Mother Jones settled on several criteria for inclusion in its mass shootings database, specifically the following:

- The shooter took the lives of at least four people;
- The killings were carried out by a lone shooter;
- The shootings happened during a single incident and in a public place; and
- The murders were not related to armed robbery or gang activity.

By virtue of these selection rules, mass shootings involving family members were excluded, even though they too can involve large body counts. Other massive shootings were ignored because of their relation to gang activity or some criminal enterprise.

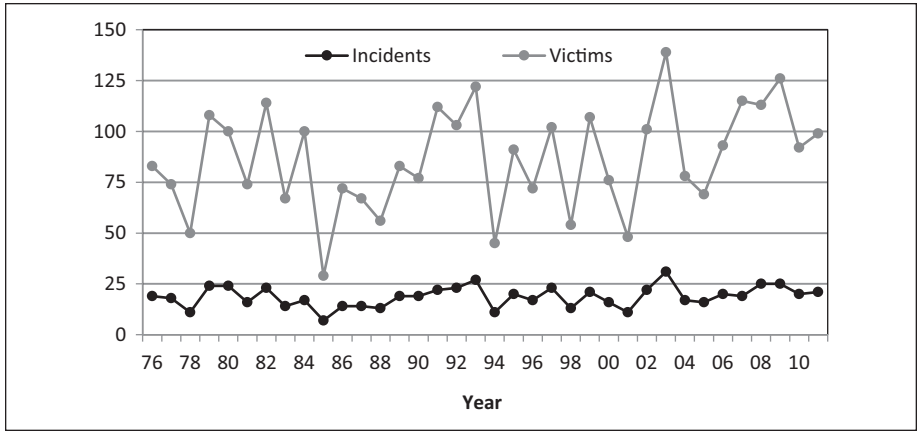

Figure 1. Mass shootings in the United States, 1976-2011.

Not only is Mother Jones's decision to disqualify cases based on certain criteria that are hard to defend but also the criteria themselves were not necessarily applied consistently (see Fox, 2013). The Columbine mass murder and the Westside Middle School massacre, for example, were included despite the fact that both were carried out by pairs of armed assailants. In response to criticism concerning the definitional concerns, Mother Jones emphasized two main themes: the need to focus more narrowly on "senseless" public shootings and the importance of investigating mass shootings beyond just the incident counts (Follman et al., 2013). Obviously, public shootings are worthy of discussion, but then so are mass killings in families or those that are designed to further some criminal enterprise. Widening the net by including mass shootings in all forms can only add to our understanding of extreme killing.

As it happens, Mother Jones's claim concerning a rise in mass shootings doesn't stand when considering the full range of cases. Figure 1 displays the number of mass shooting incidents and victims from 1976 through 2011, based on data from the FBI's Supplementary Homicide Reporting (SHR) program (along with the missing Florida data for 1996-2011 drawn directly from the state's homicide report records). These reflect all 672 mass shootings with at least four fatalities reported to local law enforcement authorities as part of the routine collection of crime statistics. Unlike the Mother Jones approach, these data do not exclude cases based on motive, location, or victim–offender relationship. They only exclude incidents in which fewer than four victims (other than the assailant) were killed, murders committed with a weapon other than a firearm, or isolated cases that may have occurred in jurisdictions that did not report homicide data to the FBI. In addition, only because of the usual time lag in crime reporting, the figures for 2012 were not yet available.

According to these expanded data, over the past few decades, there have been, on average, nearly 20 mass shootings a year in the United States. Most, of course, were

nowhere as deadly as the recent massacres in Aurora and Newtown that have countless Americans believing that a new epidemic is on them and that have encouraged healthy and often heated debate concerning causes and solutions.

Without minimizing the pain and suffering of the hundreds of those who have been victimized in recent attacks, the facts clearly say that there has been no increase in mass shootings and certainly no epidemic (see Duwe, 2004). What is abundantly clear from the full array of mass shootings is the largely random variability in the annual counts (Best, 2013). There have been several points in time when journalists and others have speculated about a possible epidemic in response to a flurry of high-profile shootings. Yet, these speculations have always proven to be incorrect when subsequent years reveal more moderate levels.

The year 1991, for example, saw a 35-year-old gunman kill 23 people at a cafeteria in Killeen, Texas, and a disgruntled graduate student murder 5 at the University of Iowa, along with other sensationalized incidents. The surge in mass killings was so frightening that a rumor spread throughout the nation that there would be a mass murder at a college in the Northeast on Halloween (Farrish, 1991). Fortunately, October 31 came and went without anything close to a massacre taking place.

And as of this writing, more than one third of the way into 2013, Mother Jones has identified but one incident that fits its definition of a senseless mass shooting. If this is any indication, the tendency for bad years to be followed by better ones will hold true once again.

Myth: Recent Mass Murders Involve Record-Setting Body Counts

If anything has increased with regard to mass murder, it is the public's fear, anxiety, and widely held belief that the problem is getting worse (see Baldassare, Bonner, Petek, & Shrestha, 2013). Unquestionably, this perception is linked to the style and pervasiveness of news-media coverage, owing in large part to advances in technology (Heath & Gilbert, 1996). In 1966, when Charles Whitman opened fire from atop the 307-foot tower at the University of Texas in Austin, there were no 24-hr news stations or fleets of satellite trucks to relay images of tragedy as they unfolded. CNN wasn't born until the 1980s, and the other major cable news outlets not until much later. Today, of course, the American public can watch chilling live coverage of some faraway mass shooting by turning on their high-definition television screens, making it feel as if the event is happening just down the street.

The emotional impact of the Sandy Hook slaughter was intensified by the immediacy of news reports. Young children, their eyes fresh with tears and their faces filled with terror from just having fled their embattled school building, were swarmed by reporters holding microphones and cameras. The news coverage of Sandy Hook had Americans glued to their TV sets. According to a USA Today/Gallup poll of more than 1,000 adults, half the respondents watched the news reporting "very closely," while 90% indicated watching at least "somewhat closely" (Saad, 2012).

The extensive news focus on school shootings certainly had an impact on perception and fear. The same USA Today/Gallup poll found that nearly one quarter of those surveyed believed that a shooting spree such as Sandy Hook was "very likely" to occur in their own community and more than half thought that it was at least "somewhat likely" (Saad, 2012).

Meanwhile, as news of the Sandy Hook shooting was still unfolding and before any perpetrator or motive was identified, scores of journalists were asking whether this was the worst school shooting in history. It didn't matter that deadlier episodes had occurred overseas (the 2004 school siege in Russia), at a college setting (Virginia Tech in 2007) or involving means other than gunfire (the 1927 school explosion in Bath, Michigan), reporters were eager to declare the Sandy Hook massacre as some type of new record (see Best, 2013).

When it comes to news reporting, the penchant for some journalists to characterize tragedy as some kind of record is mystifying. Whether the latest massacre is in any sense the worst doesn't change the associated pain and suffering of the victims, their families, and the community at large.

At the same time, there is a definite downside to media overexposure and obsession with records, and that is the possibility that some like-minded and obscure individual will see an opportunity for recognition and perhaps a chance to break a record for bloodshed (Dietz, 1986). Of course, the overwhelming majority of Americans who watch the news about a mass shooting identify with the pain and suffering of the victims and their families. However, a few individuals instead identify with the power of the perpetrator, empathize with his or her frustrations, and maybe even admire his or her instant but undeserved celebrity.

The dynamics of imitation and reinforced learning suggest that people are far more likely to model the behavior of others if they perceive the act as reaping some reward (see Bandura, 1978). Many rational adults would question how compelling Columbine shooters Dylan Klebold and Eric Harris could be as role models when, at the end of the school day, they were found lying dead from self-inflicted gunshot wounds. However, teenagers can often interpret outcomes very differently from their parents. To an unhappy, alienated adolescent, the two gunmen could be seen as heroes: Not only had they avenged the bullying, intimidation, and acts of ostracism that are commonplace in sprawling high schools such as Columbine but also they were famous for it. When TIME magazine placed the gunmen on its May 3, 1999, cover with the headline "The Monsters Next Door," most readers saw the "cover boys" as just that—monsters. A few like-minded teenagers would have considered them celebrities who had the courage to get even, to claim a victory for bullying victims everywhere (see Paton, 2012).

There are many curious examples of copycat offending, and not just among children and adolescents. The U.S. Postal Service suffered a series of shootings, beginning with the 1986 massacre of 14 postal employees in Edmond, Oklahoma, from which came the well-known phrase, "going postal." Some of these perpetrators spoke openly about other postal rampages that had preceded their own. Adam Lanza, the Sandy Hook school shooter, was reportedly obsessed with Anders Breivik, a Norwegian mass

murderer responsible for killing 77 people, and he, in turn, was fascinated with the notorious Unabomber, Theodore Kaczynski.

This so-called "copycat effect," while widely embraced in the popular press, has received only limited attention in scholarly research, and mostly in the area of suicide (see Coleman, 2004). Sociologist David Phillips (1982) gave the imitation hypothesis more than a modicum of credibility with a series of studies related to the publicity surrounding suicides and subsequent increases in attempted or completed suicides. Phillips similarly observed, based on quasi-experimental time series data, a lagged impact of executions and major prize fights on rates of homicide (Phillips, 1983). Phillips's findings, however, have been seriously criticized for violation of model assumptions and for capitalizing on chance results (Baron & Reiss, 1985).

Given the paucity of hard evidence about the exact magnitude of copycatting, particularly with regard to multiple murders, we are left with but an array of anecdotes suggesting how mass murderers were drawn to those who perpetrated similar crimes. Even then, there is no certainty that the murders would not have occurred regardless of modeling. At best, copycatting might influence the form, and not necessarily the inspiration, for mass murder.

Whatever the extent of imitation, it is important that media coverage not obsess over large and especially record-setting body counts and avoid the tendency to sensationalize already sensational events (see Duwe, 2000). Indeed, there is a critical distinction between shedding light on a crime and a spotlight on the criminal.

Myth: Violent Entertainment, Especially Video Games, Are Causally Linked to Mass Murder

Besides the imitation of notorious crimes and criminals, fictional portrayals of violence can provide a source for modeling behavior. Certainly, concern over the negative impact of violent entertainment extends back generations. Yet, the realism offered by today's entertainment options has intensified the debate.

It can be tempting to try to implicate entertainment media—especially video games—for various stunning episodes of extreme violence. A Gallup poll taken in the wake of the April, 1999, Columbine massacre found that 62% of the more than 1,000 adults surveyed nationwide felt that entertainment media was a major cause of school violence (Newport, 1999), and 83% supported restrictions on sales of violent media to children (see Carlson, 2002). Furthermore, a Gallup poll of approximately 1,000 adults nationwide taken immediately following the December 2012, Sandy Hook shooting found that 78% of respondents believed that reducing the depiction of gun violence in entertainment media would be effective in decreasing the risk of mass shootings (Newport, 2012).

It is not surprising that most schoolyard shooters and many adult mass murderers played violent video games in their spare time. To be sure, violent people are often attracted to violent entertainment, on TV, in film, or through game consoles. However, the ability to document a direct causal link indicating that consuming violent entertainment leads to violent behavior has eluded social science researchers for years (Brief of Social Scientists et al., 2010; Ferguson, 2011; Grimes, Anderson, & Bergen, 2008).

Much was written in the popular press about the fact that Sandy Hook shooter Adam Lanza spent long hours alone in the basement of his Newtown home playing violent video games (see, for example, Edelman, 2013). However, his gaming may be more a symptom of his personality and temperament than the cause. As a socially awkward youngster, reportedly with Asperger's syndrome, his social isolation may be the key to his preoccupation with gaming as well as his rampage against an unwelcoming society.

The entertainment industry has, at times, been used as a convenient scapegoat, and censorship as an easy solution. Lawsuits directed against various media organizations have occasionally been launched, albeit unsuccessfully, when it was discovered that some mass murderer had been obsessed with violent entertainment. Such concerns also led to the passage of a 2005 California ban on the sale of violent video games to minors, although the U.S. Supreme Court ultimately judged the prohibition to be unconstitutional in a 7-2 decision (*Brown, Governor of California, et al., v. Entertainment Media Association et al.*, 2011). It has long been easy to point fingers at this profitable industry, while ignoring some of the root causes of violence that are much more difficult to resolve.

To the extent that youngsters spend endless hours being entertained by violence says more about the lack of parental supervision and control. It isn't that the entertainment media are so powerful; it is that our other institutions—family, school, religion, and neighborhood—have grown weaker with respect to socializing children (see Flannery, Modzeleski, & Kretschmar, 2013; Paton, 2012). Banning violent entertainment may be an easy fix, especially when policymakers are unwilling or unable to deal with the more fundamental causes of violence.

Myth: Greater Attention and Response to the Telltale Warning Signs Will Allow Us to Identify Would-Be Mass Killers Before They Act

In the aftermath of an extremely violent episode, survivors typically question why certain warning signs were ignored. The warning sign can even come in the form of overt or veiled threats articulated by the soon-to-become mass murderer—a process that has been termed "leakage" (O'Toole, 2008). If anything, these indicators are yellow flags that only turn red once the blood has spilled and are identified in the aftermath of tragedy with crystal-clear hindsight.

There certainly exist a number of common features in the profile of a mass shooter. As shown in Table 1, they are overwhelmingly male (more than 95% are male), more often Caucasian (nearly two thirds are White), and older than murderers in general (half are more than 30 years of age). Beyond just these demographics, mass killers tend to share a number of psychological and behavioral characteristics, including depression, resentment, social isolation, the tendency to externalize blame, fascination with graphically violent entertainment, and a keen interest in weaponry (see Fox & Levin, 2003). However, these characteristics, even in combination, are fairly prevalent in the general population.

Table 1. Demographic Characteristics of Mass Shooters, 1976-2011.

Demographic characteristic	*n*	%
Offender sex		
Male	506	95.8
Female	22	4.2
Total	528	100.0
Offender race		
White	321	62.0
Black	171	33.0
Other	26	5.0
Total	518	100.0
Offender age		
Under 20	63	12.2
20-29	196	38.1
30-39	127	24.7
40-49	95	18.4
50 and above	34	6.6
Total	515	100.0

Note. The total count of 692 was reduced because of unknown offender characteristics.

Profiles and checklists designed to predict rare events—such as mass shootings—tend to over-predict, producing a large number of "false positives" (see Chaiken et al., 1994; Norko & Baranoski, 2008). Many people may closely match the profile—angry, frustrated folks who are reclusive, quick to blame others for their shortcomings and make threatening remarks—but very few will in fact commit murder, much less mass murder (see Bjelopera, Bagalman, Caldwell, Finklea, & McCallion, 2013; Ferguson, Coulson, & Barnett, 2011; Mulvey & Cauffman, 2001).

In addition, aggressive attempts to single out potential troublemakers before they make trouble can potentially do more harm than good by stigmatizing, marginalizing, and traumatizing already troubled individuals. If they already feel mistreated, then focused interventions, even if benevolent, can easily be misinterpreted as further evidence of persecution, thereby encouraging a violent outburst rather than discouraging it (see Fox & Levin, 1994, 2012; Lakeman, 1997).

Myth: Widening the Availability of Mental Health Services Will Allow Unstable Individuals to Get the Treatment They Need and Avert Mass Murders

Recent mass shootings at the hands of seemingly disturbed individuals have prompted mental health advocates to push for increased access to treatment. Unfortunately, countless Americans suffer from depression and loneliness. Many go without the psychiatric treatment that they desperately need but perhaps cannot afford.

It would certainly be a fitting legacy to the tragedy in Newtown if mental health services were expanded and improved. However, greater access to treatment options may not necessarily reach the few individuals on the fringe who would seek to turn a school, a shopping mall, or a movie theater into their own personal war zone. With their tendency to externalize blame and consider themselves as victims of mistreatment, mass murderers see the problem to reside in others, not themselves (Knoll, 2012). If urged or even coerced to seek counseling, the would-be mass murderer would likely resist angrily to the suggestion that something is wrong with him or her. He or she desires fair treatment, not psychological treatment (see, for example, Fox & Levin, 1994).

In the aftermath of high-profile mass shootings, political leaders often rally to address the needs of the mentally ill. Unfortunately, this timing tends to stigmatize the vast majority of people who suffer from mental illness as if they too are mass murderers in waiting (see Barry, McGinty, Vernick, & Webster, 2013). However, no clear relationship between psychiatric diagnosis and mass murder has been established (see Busch & Cavanaugh, 1986; Dietz, 1986; Taylor & Gunn, 1999).

In addition, the sudden initiative to aid the psychologically impaired may be the right thing to do but for the wrong reason. For example, during an April 8, 2013, speech in Hartford, Connecticut, delivered months after the Sandy Hook school shooting, President Barack Obama (2013) urged Congress to respond: "We need to help people struggling with mental health problems get the treatment they need *before it is too late*" [italics added]. We should endeavor to help the mentally ill out of concern for their well-being, not just because we are worried about the well-being of those they might kill (Swanson, 2008).

Myth: Enhanced Background Checks Will Keep Dangerous Weapons Out of the Hands of These Madmen

If one thing is predictable about mass shootings, it is that they will spark heated debate over gun control. Many public officials and private citizens alike insist that we must find a way to keep guns away from our most dangerous element (see Barry et al., 2013; Best, 2013). However, they are often blinded by passion and anger from confronting the practical limitations to achieving that desirable objective.

Most mass murderers do not have criminal records or a history of psychiatric hospitalization (Dietz, 1986). They would not be disqualified from purchasing their weapons legally. A recent examination of 93 mass shootings from January 2009 through September 2013, conducted by Mayors Against Illegal Guns (2013), found no indication that any of the assailants were prohibited by federal law from possessing firearms because they had been adjudicated mentally ill or had been involuntarily committed for treatment. And in just 10 of the 93 cases, there was evidence that concerns about the mental health of the shooter had been brought to the attention of a medical practitioner or legal authority prior to the shooting spree.

People cannot be denied their Second Amendment rights just because they look strange or act in an odd manner. Moreover, would-be mass killers can usually find an alternative

Table 2. Mass Shootings and the Federal Assault Weapon Ban.

	Incidents		Victims	
Time period	Total	Average	Total	Average
1976-1994	335	17.6	1,536	80.8
1995-2004	193	19.3	876	87.6
2005-2011	144	20.6	699	99.9

Source. Supplementary Homicide Reports, 1976-2011.

Table 3. Weapons Used in Public Mass Shootings.

Type of firearm	*n*	%
Assault weapons	35	24.6
Semiautomatic handguns	68	47.9
Revolvers	20	14.1
Shotguns	19	13.4
Total	142	100.0

Source. Mother Jones database of mass shootings, 1982-2012.

way of securing the needed weaponry. Several mass shooters have used firearms purchased, borrowed, or stolen from a family member or friend (see Follman et al., 2013).

Myth: Restoring the Federal Ban on Assault Weapons Will Prevent These Horrible Crimes

In the aftermath of the Newtown shooting, many media pundits and political leaders alike decried the expiration of the 1994 federal ban on certain military-style assault weapons. However, a comparison of the incidence of mass shootings during the 10-year window when the assault weapon ban was in force against the time periods before implementation and after expiration shows that the legislation had virtually no effect, at least in terms of murder in an extreme form. As shown in Table 2, based on SHR data from 1976 to 2011, the average incidence and victimization level during the federal prohibition was not especially different than in the years before or after the law was operative.

The overwhelming majority of mass murderers use firearms that would not be restricted by an assault weapons ban (see Duwe, 2007). Moreover, the Mother Jones data, notwithstanding the questions surrounding inclusions/exclusions, suggest that assault weapons are not as commonplace in mass shootings as some gun-control advocates believe. As shown in Table 3, semiautomatic handguns are far more prevalent in random massacres than firearms that would typically be classified as assault weapons (Follman et al., 2013). In fact, only one quarter of these mass murderers killed with an assault weapon; they easily could have identified an alternate means of mass casualty if that were necessary.

In an analysis of mass shootings from January 2009 through September 2013, Mayors Against Illegal Guns (2013) confirmed the limited role of military-style assault weapons. Only 14 of the 93 incidents examined by this gun-control group involved assault weapons or high-capacity magazines. Of course, limiting the size of ammunition clips would at least compel a gunman to pause to reload or switch weapons, potentially giving others a brief window of opportunity to escape or even intervene (see Barry et al., 2013; Best, 2013). However, such an initiative would likely affect only newly produced accessories. Unfortunately, there is an ample supply of large-capacity magazines already in circulation for anyone determined enough to locate one.

Myth: Expanding "Right to Carry" Provisions Will Deter Mass Killers or at Least Stop Them in Their Tracks and Reduce the Body Counts

The potential for citizens to counterattack while an assailant stops to reload is but one reason why many gun-rights advocates argue against gun restrictions, at least for law-abiding, licensed gun owners. Specifically, many argue that the establishment of gun-free zones (e.g., schools, churches, courthouses, and other government buildings) makes citizens vulnerable to attacks by armed assailants.

Proponents for expanding concealed carry rights contend that having more people armed in public spaces would not only serve as a deterrent but also permit citizens to overpower an armed assailant. Whatever the deterrent or intervention effects, detractors have voiced concern that a sudden shootout between an assailant and citizens armed with concealed weapons could potentially catch countless innocent victims in the crossfire. As mentioned, mass killers are often described by surviving witnesses as being relaxed and calm during their rampages, owing to their level of planning. In contrast, the rest of us are taken by surprise and typically respond frantically.

Whether or not permitting concealed carry impacts the risk of mass murder is, of course, an empirical question, and not just a debate involving hypotheticals. Using a Poisson regression approach, Lott and Landes (2000) analyzed the effect of right-to-carry laws in 23 states on the incidence and magnitude of multiple-victim homicide over the time frame of 1977-1995, concluding that such legislation works to suppress the risk and extent of mass violence. However, Duwe, Kovandzic, and Moody (2002), applying the more flexible and appropriate negative binomial model to a time frame expanded through 1999, concluded that the effect of right-to-carry laws was negligible, neither encouraging nor discouraging mass shootings.

The debate over an armed citizenry has focused specifically on schools and the need to protect vulnerable populations of students from armed assailants. Since the Newtown shooting, lawmakers in as many as six states have promoted legislation to arm schoolteachers and train them to shoot. And, based on a nationwide poll by the Gallup organization, nearly two thirds of Americans see merit in this idea (Newport, 2012).

Supporters of firearms-for-faculty laws argue that ever since the early 1990s, when the U.S. Congress established schools as gun-free zones, an armed assailant, be it a student-insider or a stranger-intruder, could be assured to face little opposition. The belief

is that arming teachers and administrators might serve as a powerful deterrent to anyone contemplating a Columbine-style school shooting. It is hard to imagine, however, that a vengeful student, who is willing to die by police gunfire or by his or her own hand, would be dissuaded by knowing that the faculty were armed. He may even welcome the chance to shoot it out with the principal at high noon in the school cafeteria.

The debate over guns on campus has been particularly contentious with regard to institutions of higher education. The national grassroots organization Students for Concealed Carry has had some success in convincing legislators that the body count in episodes such as the Virginia Tech massacre, in which 32 people were slain, would be reduced were properly licensed and trained students allowed to carry guns to class. However, in light of the low rate of serious violence on campus and the high prevalence of substance abuse and depression among college students, it would seem ill-advised to encourage gun carrying by anyone other than duly sworn public safety personnel.

Myth: Increasing Physical Security in Schools and Other Places Will Prevent Mass Murder

The immediate response to deadly shootings in schools and other buildings is typically a call for enhanced physical security (see Lassiter & Perry, 2009; Trump, 2011). In the short term, access control and close surveillance may calm the fears of an anxious public. In the long run, it is equally important to avoid transforming our public spaces into fortresses.

Out of concern for the safety of the most vulnerable members of society, schools at all levels have seen the need to invest significant resources in physical security measures. As shown in Table 4, public schools have particularly embraced access control strategies as well as surveillance technology. Despite the tremendous suffering that would come from a school shooting, the exceptionally low probability of such an event would argue against excessive levels of security (Fox & Burstein, 2010). Children should not be constantly reminded of their vulnerability, suggesting that they have a target on their backs. It hardly serves the primary mission of educating students.

Although generally effective in protecting a student population, most security measures serve only as a minor inconvenience for those who are determined to cause mayhem (see Fox & Burstein, 2010; Rocque, 2012; Trump, 2000). Two middle school students in Arkansas, for example, didn't bother trying to bring guns into school. They only had to pull the fire alarm and wait outside in the schoolyard for their human targets to emerge from the building.

Myth: Having Armed Guards at Every School Will Serve to Protect Students From an Active Shooter and Provide a Deterrent as Well

In the wake of the Sandy Hook massacre, Wayne LaPierre, Executive Director of the National Rifle Association (NRA), suggested that we equip every school in America—schools of every size, level, and type—with an armed guard. Central to the set of

Table 4. Percentage of Public Schools With Various Safety and Security Measures.

School safety and security measure	School year				
	1999-2000	2003-2004	2005-2006	2007-2008	2009-2010
Controlled access during school hours					
Buildings (e.g., locked or monitored doors)	74.6	83.0	84.9	89.5	91.7
Grounds (e.g., locked or monitored gates)	33.7	36.2	41.1	42.6	46.0
Closed the campus for most students	64.6	66.0	66.1	65.0	66.9
Required to wear badges or picture IDs					
Students	3.9	6.4	6.1	7.6	6.9
Faculty and staff	25.4	48.0	47.8	58.3	62.9
Metal detector checks on students					
Random checks	7.2	5.6	4.9	5.3	5.2
Required to pass through daily	0.9	1.1	1.1	1.3	1.4
Sweeps and technology					
Random sweeps for contraband	11.8	12.8	13.1	11.4	12.1
Provided telephones in most classrooms	44.6	60.8	66.8	71.6	74.0
Notification system for school-wide emergency	NA	NA	NA	43.2	63.1
Anonymous threat reporting system	NA	NA	NA	31.2	35.9
Used security cameras to monitor the school	19.4	36.0	42.8	55.0	61.1
Visitor requirements					
Sign in or check in	96.6	98.3	97.6	98.7	99.3
Dress code					
Required students to wear uniforms	11.8	13.8	13.8	17.5	18.9
Enforced a strict dress code	47.4	55.1	55.3	54.8	56.9
School supplies and equipment					
No book bags or clear-only ones	5.9	6.2	6.4	6.0	5.5
Provided school lockers to students	46.5	49.5	50.6	48.9	52.1

Source. U.S. Department of Education, National Center for Education Statistics, School Survey on Crime and Safety 2000, 2004, 2006, 2008, and 2010.

Table 5. Percentage of Public Schools With Security Personnel.

School characteristics	%t of schools with security guards or sworn police officers			% of schools with regularly armed security personnel		
	2005-2006	2007-2008	2009-2010	2005-2006	2007-2008	2009-2010
All public schools	41.7	46.3	42.8	30.7	34.1	28.0
Grade level						
Primary school	26.2	33.1	27.7	15.7	20.1	12.5
Middle school	63.7	65.5	66.4	51.8	54.2	51.0
High school	75.2	79.6	76.4	64.0	67.5	63.3
Combined school	43.5	39.9	36.6	32.4	32.1	24.6
Enrollment size						
Less than 300	22.7	27.6	25.6	16.2	16.1	13.5
300-499	29.8	36.1	33.5	20.5	26.7	19.8
500-999	50.5	52.7	47.3	36.9	39.5	30.3
1,000 or more	86.9	90.6	90.0	70.3	73.5	74.6
Locale						
City	49.1	57.3	50.9	30.5	33.1	27.6
Suburb	42.7	45.4	45.4	32.2	33.7	29.6
Town	44.4	51.1	39.0	38.1	45.0	31.6
Rural	33.8	36.0	35.2	27.1	30.5	25.3
Percent minority enrollment						
Below 5%	28.3	35.6	30.4	22.9	27.1	21.9
5% up to 20%	38.9	42.9	36.5	30.2	37.7	27.6
20% up to 50%	41.6	44.7	41.9	35.3	38.4	30.5
50% and above	51.3	55.4	52.5	31.3	31.8	29.1

Source. U.S. Department of Education, National Center for Education Statistics, 2005-2006, 2007-2008, and 2009-2010 School Survey on Crime and Safety (SSOCS), 2006, 2008, and 2010.

recommendations advanced by an NRA-sponsored task force is for schools to be sufficiently prepared to ward off any dangerous intruder (see Hutchinson, 2013).

Actually, as shown in Table 5, many schools, especially high schools and those in urban areas, already use security personnel, often equipped with firearms. Notwithstanding the many benefits to employing well-trained school resource officers (Rich-Shea, 2010) as a deterrent to mass shootings, this too is limited. Columbine High School, in fact, had school resource officers on duty the day in 1999 when two alienated adolescents turned their school into a war zone. Columbine was a fairly large campus with nearly 2,000 students enrolled, and the officers couldn't be everywhere at once.

If armed guards and armed teachers are indeed worthy strategies for protecting children, then what should schools do to protect the students before and after school? Expanding this approach would dictate providing weapons to coaches, athletic directors, and even bus drivers.

Conclusion

The fact that gun control, expanded psychiatric services, and increased security measures are limited in their ability to prevent dreadful mass shootings doesn't mean that we shouldn't try. In the immediate aftermath of the Newtown shooting, there was momentum in Washington, D.C., and in various state legislatures to establish policies and procedures designed to make us all safer.

Gun restrictions and other initiatives may not stop the next mass murderer, wherever he or she may strike, but we can enhance the well-being of millions of Americans in the process. Besides, doing something is better than doing nothing. At least, it will reduce the debilitating feeling of helplessness.

Many of the well-intentioned proposals coming in response to the recent spike in mass shootings may do much to affect the level of violent crime that plagues our nation daily. We shouldn't, however, expect such efforts to take a big bite out of crime in its most extreme form. Of course, taking a nibble out of the risk of mass murder, however small, would still be a worthy goal for the nation. However, those who have suggested that their plan for change will ensure that a crime such as the Sandy Hook massacre will never reoccur will be bitterly disappointed.

Eliminating the risk of mass murder would involve extreme steps that we are unable or unwilling to take—abolishing the Second Amendment, achieving full employment, restoring our sense of community, and rounding up anyone who looks or acts at all suspicious. Mass murder just may be a price we must pay for living in a society where personal freedom is so highly valued.

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EXHIBIT 45

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CRIMINOLOGY & Public Policy

SPECIAL ISSUE ARTICLE

COUNTERING MASS VIOLENCE IN THE UNITED STATES

Evidence concerning the regulation of firearms design, sale, and carrying on fatal mass shootings in the United States

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Research Summary: We used data from the FBI's Supplemental Homicide Reports and other publicly available databases to calculate state-level annual incidence of fatal mass shootings for 1984–2017. Negative binomial regression models were used to estimate the associations between changes in key gun laws and fatal mass shootings. Handgun purchaser licensing laws and bans of large-capacity magazines (LCMs) were associated with significant reductions in the incidence of fatal mass shootings. Other laws commonly advocated as solutions to mass shootings—comprehensive background checks, assault weapons bans, and de-regulation of civilian concealed carry of firearms—were unrelated to fatal mass shootings.

Policy Implications: Our findings suggest that laws requiring firearm purchasers to be licensed through a background check process supported by fingerprints and laws banning LCMs are the most effective gun policies for reducing fatal mass shootings.

KEYWORDS
mass shooting, gun regulation, EVALUATION

High-profile public mass shootings (e.g., incidents that gain significant media attention as a result of high victim count and/or unique characteristic such as location or motive) prompt what have become predictable responses across the political spectrum. One side points to easy firearm access as the key cause of mass shootings and calls for stronger gun laws including comprehensive background checks, bans on assault weapons and large-capacity magazines (if those were used), and more recently, Extreme Risk Protection Order (ERPO) laws to disarm persons planning violent acts. The other side sees unarmed victims being shot in mass shootings and focuses on the hypothetical question, "What if one of the victims or a bystander used a firearm to stop the attack?" The solutions to mass shootings that stem from this perspective include eliminating so-called "gun free zones" and reducing or eliminating restrictions on civilian carrying of concealed firearms in public places.

In a study of fatal mass shootings in the United States during 2014–2017 with several online data sources, Zeoli and Paruk (2020, issue) determined that 46% of the shootings were committed by someone who was prohibited or likely prohibited from possessing a firearm. But the breadth of disqualifying conditions for firearm possession—e.g., whether convictions for violent misdemeanors, domestic violence restraining orders (DVROs) involving dating partners, and younger than 21 years of age disqualify someone from purchasing or possessing a firearm—vary significantly across states and determine the size of the pool of persons at increased risk for perpetrating firearm violence who are legally prohibited from purchasing or possessing firearms (Vittes, Vernick, & Webster, 2012). Indeed, the breadth of disqualifying conditions for persons with a history of violence was consistently associated with reductions in rates of intimate partner homicides (Zeoli et al., 2018). Because many mass shootings are committed in the context of domestic violence or involve perpetrators with a history of domestic violence (Zeoli & Paruk, 2020), broader firearm restrictions for DVROs and violent misdemeanors could potentially reduce mass shootings.

Broad firearm prohibitions for violent or other criminal actions may not keep those individuals from accessing firearms without strong background check systems. State laws requiring comprehensive background checks (CBCs) and purchaser licensing could also potentially influence firearm availability to individuals at risk of perpetrating a mass shooting by making it harder for prohibited persons to obtain firearms. The typical CBC law requires prospective purchasers in private transfers of firearms to pass a background check that is facilitated through a licensed firearm dealer. In contrast, most purchaser licensing laws require prospective purchasers to apply directly at public safety agencies where they are fingerprinted for thorough background checks that include more complete records of prohibiting incidents and greater time available to conduct those checks than is the case for background checks absent licensing. Some licensing laws also require gun safety training, and a few provide officials the ability to use their discretion to deny an applicant if there is good reason to believe he or she might be dangerous (e.g., some history of violence). Rigorous studies of the impact of state CBC laws have not shown that these laws reduce homicides (Castillo-Carniglia et al., 2018; Kagawa et al., 2018; Zeoli et al., 2018); however, there has been consistent evidence that licensing laws reduce homicides (Crifasi et al., 2018; Hasegawa, Webster, & Small, 2019; Rudolph, Stuart, Vernick, & Webster, 2015) and suicides (Crifasi, Meyers, Vernick, & Webster, 2015). Licensing laws could potentially suppress fatal mass shootings, but there are no rigorous studies examining this question.

The research literature on the effects of firearm policies on mass shootings is sparse and has important limitations. A recent study found that that higher rates of gun ownership and greater permissiveness of gun laws were associated with higher rates of fatal mass shootings for incidents connected to domestic violence and other types of mass shootings (Reeping et al., 2019). Unfortunately, the gun law permissiveness scale used in the study has not been fully described, evaluated, or validated, and it does not allow for estimates of the effects of specific firearm laws on mass shootings.[1] Furthermore, the data to identify fatal mass shootings in this study—the FBI's Supplemental Homicide Reports (SHR)—did

not include major fatal mass shootings, including shootings at Sandy Hook Elementary School in Newtown, Connecticut, in 2012 (26 deaths); a movie theatre in Aurora, Colorado, in 2012 (12 deaths and 58 individuals with nonfatal gunshot wounds); or a church in Southerland Springs, Texas (26 deaths and 20 nonfatally wounded). The data for this study also counted the Virginia Tech mass shooting (32 deaths and 23 victims with nonfatal wounds) as three incidents as a result of the way that the SHR limits the number of victims to 11 in any given homicide incident. Another recent state-level study used an open-source database compiled by the publication *Mother Jones* and found no association between measures of gun ownership and gun law permissiveness and fatal mass shootings in public places (Lin, Fei, Barzman, & Hossain, 2018). The generally undescribed gun law permissiveness measure, however, seemed to be limited to concealed carry restrictions, and the *Mother Jones* database has been criticized for inconsistent application of inclusion/exclusion criteria and for missing some cases (Fox & Fridel, 2016).

Luca and colleagues estimated the effects of several state gun laws—CBC laws that extend background check requirements to private transfers, purchaser licensing laws, regulations over civilians carrying concealed weapons, bans of assault weapons or large-capacity magazines (LCMs)—and the probability that a four-fatality mass shooting occurred in a given state and year during 1989–2014 (Luca, Malhotra, & Poliquin, 2019). Unfortunately, the authors used linear regression models that violated model assumptions for binary outcomes and thus made the findings difficult to interpret.

Two recent studies, each using different data sources and different outcome measures for fatal mass shootings, drew different conclusions regarding the association between the federal ban of assault weapons and LCMs. Fox and Fridel (2016) used the SHR data to examine cases involving four or more firearm homicide victims and found no association between the incidence of fatal mass shootings and the presence of the federal ban of assault weapons and LCMs. It is curious that these researchers did not examine whether the ban influenced the number of persons shot in mass shootings because the characteristics of the banned products are relevant to how many shots can be fired in a short span of time. Indeed, recent studies have documented that fatal mass shootings committed with assault weapons and/or LCMs result in significantly more victims shot than is the case in such shootings which involved no assault weapons or LCMs (Klarevas, 2016; Koper, 2020, this issue; Koper, Johnson, Nichols, Ayers, & Mullins, 2018). DiMaggio and colleagues (2019) published a study in which they reported that during the period when the federal ban of assault weapons and LCMs was in place (1994–2004), fatal mass shootings were 70% less likely to occur. But this study had major limitations based on the data used and the lack of statistical controls for other law changes or social trends that might explain variation in mass shootings. The study used data on fatal public mass shootings with four or more fatalities for the years 1981 through 2017 that were collected by three open-source databases—*Mother Jones*, *Los Angeles Times*, and Stanford University. Inexplicably, the researchers only included cases in their analyses that appeared in all three sources and thereby excluded many incidents of fatal mass shootings. This limited their data to only 51 public mass shootings that presumably were the most widely publicized. The study did not examine variation by state and thus did not consider state gun laws nor did it control for other covariates other than linear trend. Gius (2015) estimated the effects of federal and state bans of assault weapons and LCMs with annual data from the SHR for the years 1982–2011 and found evidence that such bans were linked to lower rates of fatalities in mass shootings. Klarevas, Conner, and Hemenway (2019) found that LCM bans were associated with significantly fewer incidents of high-fatality (six or more victims) mass shootings and lower fatality rates for such shootings during the period 1990–2017. An important limitation of this study was that it did not consider the effects of any other type of firearm laws.

In-depth studies of the circumstances surrounding public mass shootings in the United States during 2000–2017 have found that armed civilians with concealed carry permits played a role in stopping mass

shootings while they are in progress in 5% of the incidents (ALERT & FBI, 2018; Blair & Schwieit, 2014). The presence of armed civilians could also potentially deter some attacks in public places. Conversely, because some mass shootings result from spontaneous responses to conflict, having more people with immediate access to a firearm could spur more mass shootings. The Violence Policy Center (2019) identified 33 incidents between May 2007 and January 2019 in which someone with a permit to carry a concealed firearm shot and killed three or more people in an incident. Prior studies designed to estimate the impact of reducing legal restrictions on civilian concealed gun carrying in public places have been plagued by methodological limitations and have found inconsistent relationships between the adoption of such laws and homicides (Crifasi et al., 2018; Donohue, Aneja, & Weber, 2019; Morral, 2017). As a result, there is great uncertainty about the impact of laws that reduce barriers to civilian gun carrying on fatal mass shootings.

1 | METHOD

1.1 | Data

This research relied on data obtained from the FBI's SHR, which includes information on the number of victims, the demographics of the offender(s) and victim(s), the weapon(s) used, some circumstances or perpetrator motives, and the relationship between the offender and the first victim. We limited our data set to incidents of homicide that occurred between 1984 and 2017, involved four or more victims (excluding any offender death), and involved a firearm of any type. We excluded any case that was coded as having a connection to gang or narcotic activity because one of our supplemental data sets excludes gang- or narcotic-related events. Other studies that have examined mass shooting frequency have excluded gang and narcotic incidents, so we excluded these incidents to adhere to the current literature (Klarevas, 2016; Lankford, 2016). We also created a variable that indicated whether a shooting involved a domestic relationship because some laws restrict firearm access based on history of domestic violence. We defined domestic relationships broadly, including any offender–victim family relationship, boyfriend/girlfriend, or ex-spouse. Importantly, the offender–victim relationship data in SHR is based on the relationship between the offender and the first victim recorded in the homicide report.

Because SHR data rely on voluntary law enforcement reporting, some homicide data is missing. In particular, exploratory analysis revealed that the SHR did not include several high-profile, high-casualty mass shootings including the 2012 Newtown, CT, school shooting; the 2012 Aurora, CO, movie theater shooting; and the 2017 Sutherland Springs, TX, church shooting. To remedy these and other omissions, we compared the SHR data with data on mass shootings collected by Stanford University (*Stanford Mass Shootings in America, courtesy of the Stanford Geospatial Center and Stanford Libraries*, n.d.) for the years 1984–2017 and the Gun Violence Archive for the years 2014–2017 (*Mass Shootings in 2017*, n.d.) and added any missing incidents to our data set.[2] We followed Zeoli et al. (2018) in excluding Florida, Kansas, Kentucky, Nebraska, and Montana from our analysis because of systemic Uniform Crime Reports (UCR)–SHR reporting issues over multiple years.

Data on gun laws were collected and coded using traditional legal research methods. We included several state-level statutes: concealed carry laws, handgun purchaser licensing laws that require either in-person application or fingerprinting, laws requiring point-of-sale background checks only, firearm prohibitions for subjects of domestic violence restraining orders that include ex parte orders, firearm prohibitions for subjects of domestic violence restraining orders that include dating partners in the

definition of domestic violence, firearm prohibitions for subjects of domestic violence restraining orders that do not include ex parte orders or dating partners, laws requiring surrender of all firearms by subjects of domestic violence restraining orders, firearm prohibitions for violent misdemeanants, assault weapon bans, and large-capacity magazine bans. Some of the legal data was obtained from prior work (Zeoli et al., 2018). We obtained any missing legal data from the Thomson Reuters Westlaw database. Using Westlaw, Hein Online, and Lexis Nexis, we tracked each state's statutory history to determine when each law was enacted. Each collected law was compared with existing publicly available databases of state gun laws (Everytown; Giffords; *State Firearm Laws*). Any conflicts between our data set and the databases was resolved by reevaluating the statutory or legislative text. Specific laws and the states and time periods in which they were in effect are presented in Table 1. For our analysis, we coded the laws using a binary 0–1 variable that was only equal to 1 in a year in which a given state law was in effect for at least half of the year.

Our demographic control variables included a commonly used proxy measurement of gun ownership (proportion of all suicides where the chosen method was a firearm), state unemployment rate, poverty rate, percent population identified as male, percent population identified as Black, percent married, percent divorced, percent military veteran, percent living in an Metropolitan Statistical Area, ethanol consumption per capita, religious adherence, percent with a high school diploma, the drug overdose rate (estimated by the rate of nonsuicide overdose deaths), and the proportion of the population aged 15–24 years. These variables were gathered from the U.S. Census Bureau (Census), the Centers for Disease Control and Prevention (CDC), the Bureau of Labor Statistics (BLS), the Religion and Congregation Membership Survey (ARDA), and the National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2017). Missing years of demographic data were interpolated. These control variables were selected based on prior research on firearm homicide and suicide (Crifasi et al., 2015; Rudolph et al., 2015; Zeoli et al., 2018).

1.2 | Analysis

We used generalized linear models with a negative binomial distribution to conduct pooled time-series analyses of three dependent variables measured at the state-year level: domestic-linked mass shootings, non–domestic-linked mass shootings, and all mass shootings. All three are overdispersed count variables. In addition to analyzing incidents of fatal mass shootings, we also analyzed the number of victim fatalities in fatal mass shootings as an outcome variable. The models included state fixed effects, the law variables, and the sociodemographic covariates as well as linear and quadratic trend terms to control for unmeasured conditions that may have influenced fatal mass shootings during the study period. In addition to the full models with all covariates, we examined parsimonious models that limited the sociodemographic control variables with coefficients in the full model that had p values less than .10. All models used a negative binomial distribution with robust standard errors accounting for clustering by state and with overall state population as the exposure variable.

We also performed several sensitivity analyses. To provide a more flexible control for unmeasured national trends, we substituted year fixed effects for the linear and quadradic trend terms in our models. Prior work has suggested that LCM and assault weapon bans might phase in gradually because of pre-ban spikes in purchasing and production (Koper, Woods, & Roth, 2004). To examine this, we ran our models with state LCM bans and state and federal assault weapon bans coded to phase in gradually, starting with .2 in year 1 and increasing .2 per year until hitting 1 in year 5. To evaluate whether specific, high-profile mass shooting incidents might be leading to policy adoption, we ran our models without specific observations for the years just prior to policy implementation.

TABLE 1 Federal and state laws examined and dates those laws went into in effect or were repealed

State	Assault Weapon Ban	Large-Capacity Magazine Ban	Private Transfer Laws: Purchaser licensing with in-person or fingerprinting	Private Transfer Laws: Point-of-sale background check only	Prohibitions Related to Domestic Violence Restraining Orders (DVROs): Final DVRO only	Includes ex parte orders	Includes dating partners	Includes surrender provision
Alabama					9/1/15			
Alaska							7/1/96	7/1/96
Arizona					7/20/96–7/21/97	7/21/97	9/30/09	7/20/96
Arkansas								
California	12/31/91	1/1/00		1/1/91		1/1/95	1/1/91	1/1/95
Colorado		7/1/13		7/1/13	7/1/13		2/26/94–11/30/98	7/1/13
Connecticut	7/1/94	4/4/13	10/1/95		10/1/94–10/1/99	10/1/16	10/1/99	10/1/94
Delaware				7/1/13		1/16/94	9/18/07	1/16/94
Georgia								
Hawaii			pre-1984		6/10/93–7/1/94	7/1/94	6/7/00	6/10/93
Idaho								
Illinois						1/1/10	1/1/96	1/1/96
Indiana				pre-1984–11/30/98			7/1/02	7/1/02
Iowa			pre-1984		7/1/10			7/1/10
Louisiana							8/1/14	
Maine					9/19/97–9/13/03	9/13/03		9/13/03
Maryland	10/1/13	8/1/94	10/1/13	10/1/96–10/1/13	10/1/96–10/1/09	10/1/09	10/1/15	10/1/96
Massachusetts	10/21/98	10/21/98	pre-1984			7/1/94	7/1/94	7/1/94
Michigan			pre-1984–12/18/12				4/1/96	
Minnesota							8/1/14	8/1/14

(Continues)

TABLE 1 (Continued)

State	Assault Weapon Ban	Large-Capacity Magazine Ban	Private Transfer Laws: Purchaser licensing with in-person or fingerprinting	Private Transfer Laws: Point-of-sale background check only	Prohibitions Related to Domestic Violence Restraining Orders (DVROs): Final DVRO only	Includes ex parte orders	Includes dating partners	Includes surrender provision
Mississippi								
Missouri			pre-1984–8/28/07					
Nevada				1/1/17			10/1/07	10/1/07
New Hampshire						1/1/00	1/1/00	1/1/00
New Jersey	5/1/90	5/1/90	pre-1984			11/11/91	8/11/94	8/11/94
New Mexico								
New York	11/1/00	11/1/00	pre-1984			11/1/96	7/21/08	11/1/96
North Carolina					12/1/95–12/1/97	12/1/03	12/1/97	12/1/03
North Dakota								
Ohio								
Oklahoma								
Oregon				8/9/15	1/1/16			
Pennsylvania				10/11/95		5/9/06	12/5/94	12/5/94
Rhode Island				pre-1984		7/1/17	7/1/05	7/1/05
South Carolina					6/4/15			
South Dakota								
Tennessee				5/10/94–11/1/98	7/1/09			7/1/09
Texas						1/1/08	9/1/01	
Utah						7/1/95		
Vermont							2/2/01	
Virginia						7/1/94		

(Continues)

TABLE 1 (Continued)

State	Assault Weapon Ban	Large-Capacity Magazine Ban	Private Transfer Laws: Purchaser licensing with in-person or fingerprinting	Private Transfer Laws: Point-of-sale background check only	Prohibitions Related to Domestic Violence Restraining Orders (DVROs): Final DVRO only	Includes ex parte orders	Includes dating partners	Includes surrender provision
Washington				12/4/14		7/1/94	7/23/95	7/1/94
West Virginia						4/14/01	6/2/98	
Wisconsin					4/1/96–7/30/02		7/30/02	4/1/96
Wyoming								

State	Concealed Carry Permitting Laws: No issue	May issue	Shall issue with discretion	Strict shall issue	Permitless carry	Violent Misdemeanor Prohibition
Alabama		pre-1984–8/1/13	8/1/13			9/1/15
Alaska	pre-1984–10/1/94			10/1/94–9/9/03	9/9/03	
Arizona	pre-1984–7/16/94			7/16/94–7/28/10	7/28/10	
Arkansas	pre-1984–7/27/94		7/27/94			
California		pre-1984				1/1/91
Colorado		pre-1984–5/17/03	5/17/03			
Connecticut		pre-1984				10/1/94
Delaware		pre-1984				
Georgia		pre-1984–8/25/89	8/25/89			
Hawaii		pre-1984				6/13/88
Idaho		pre-1984–7/1/90		7/1/90–7/1/16	7/1/16	
Illinois	pre-1984–1/5/14		1/5/14			1/1/96

(Continues)

TABLE 1 (Continued)

State	Concealed Carry Permitting Laws					Violent Misdemeanor Prohibition
	No issue	May issue	Shall issue with discretion	Strict shall issue	Permitless carry	
Indiana			pre-1984			
Iowa		pre-1984–1/1/11	1/1/11			
Louisiana	pre-1984–4/19/96			4/19/96		
Maine				pre-1984–10/15/15	10/15/15	
Maryland		pre-1984				10/1/96
Massachusetts		pre-1984				
Michigan		pre-1984–7/1/01		7/1/01		
Minnesota		pre-1984–5/28/03	5/28/03			8/1/03
Mississippi	pre-1984–7/1/91			7/1/91–4/15/16	4/15/16	
Missouri	pre-1984–2/26/04		2/26/04–1/1/17		1/1/17	
Nevada		pre-1984–10/1/95		10/1/95		
New Hampshire			pre-1984–2/22/17		2/22/17	
New Jersey		pre-1984				
New Mexico	pre-1984–1/1/04			1/1/04		
New York		pre-1984				pre-1984
North Carolina	pre-1984–12/1/95			12/1/95		

(Continues)

TABLE 1 (Continued)

State	Concealed Carry Permitting Laws					Violent Misdemeanor Prohibition
	No issue	May issue	Shall issue with discretion	Strict shall issue	Permitless carry	
North Dakota	pre-1984–8/1/85			8/1/85–8/1/17	8/1/17	4/15/85
Ohio	pre-1984–4/8/04			4/8/04		
Oklahoma	pre-1984–9/1/95			9/1/95		
Oregon		pre-1984–1/1/90	1/1/90			
Pennsylvania		pre-1984–6/17/89	6/17/89			
Rhode Island			pre-1984			
South Carolina		pre-1984–8/23/96		8/23/96		
South Dakota		pre-1984–7/1/85		7/1/85		
Tennessee	pre-1984–11/1/89	11/1/89–10/1/96		10/1/96		
Texas	pre-1984–1/1/96			1/1/96		
Utah		pre-1984–5/1/95	5/1/95			
Vermont					pre-1984	7/1/15
Virginia		pre-1984–7/1/95	7/1/95			
Washington				pre-1984		
West Virginia		pre-1984–7/7/89		7/7/89–5/24/16	5/24/16	
Wisconsin	pre-1984–11/1/11			11/1/11		
Wyoming		pre-1984–10/1/94	10/1/94–7/1/11		7/1/11	

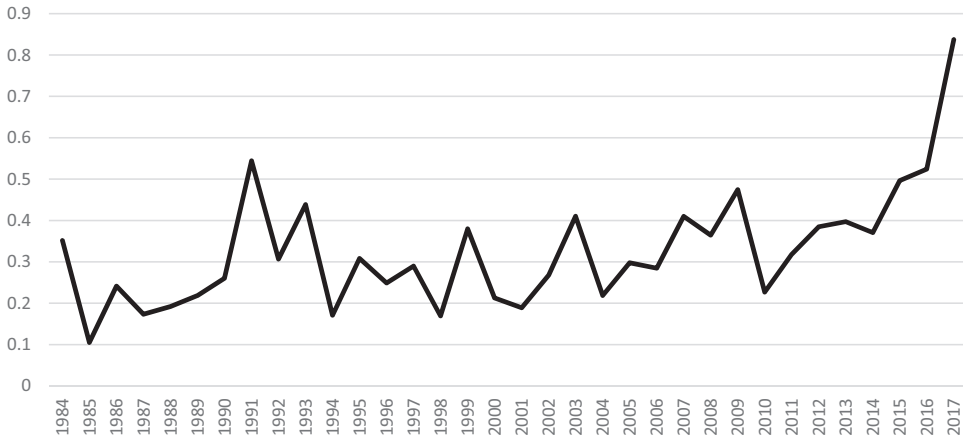

FIGURE 1 Victims in fatal mass shootings per 1 million population per year, 1984–2017

We also examined whether our findings changed when the cutoff for defining a fatal mass shooting was five or more victims and six or more victims. All models were estimated in Stata/IC 15.1 (StataCorp).

2 | RESULTS

We identified 604 mass shooting incidents involving four or more murdered victims that met our inclusion criteria (no gang- or drug-related shootings) during the 1984–2017 study period. There were 2,976 victims murdered in these incidents, 842 (28.3%) in domestic-related shootings, 2,057 (69.1%) victims in non–domestic-related shootings, and 77 victims in all shootings in which it was unclear whether the shooting was domestic related. The annual rate of mass shooting fatalities per 1 million population nationwide was .36 per 100,000 population and ranged from 0 in Delaware and Rhode Island to .88 in South Carolina (see Table A1 in the Appendix). This rate was stable through most of the study period, drifted upward during 2007–2014, before accelerating between 2014 and 2017 (Figure 1). The mean number of victim fatalities by gunfire per incident during the study period was 4.93; victim fatalities were somewhat higher during the years after the federal ban of assault weapons and LCMs expired compared with the decade during which the ban was in place (5.85 during 2005–2017 vs. 4.59 during 1995–2004; Figure 2). Most shootings had four to six victims (Figure 3). A list of descriptive statistics for independent variables can be found in Table 2.

The estimates from the full negative binomial models (Table 3) indicate that handgun purchaser licensing laws requiring in-person application with law enforcement or fingerprinting were associated with incidents of fatal mass shootings 56% lower than that of other states (internal rate of return [IRR] = 0.44, 95% confidence interval [CI] 0.26, 0.73). For LCM bans, the IRR estimate (0.52, 95% CI = 0.27, 0.98) indicates a 48% lower risk of fatal mass shootings associated with the policy. We found no evidence that concealed carry laws, assault weapons bans, prohibitions for domestic abusers and violent misdemeanants, or point-of-sale CBC laws were associated with the incidence of fatal mass shootings. In models in which the number of mass shooting victim fatalities was the outcome, handgun purchaser licensing was protective (IRR = 0.44, 95% CI 0.24, 0.82) and the point estimate for LCM bans suggests a large protective effect albeit with a wide confidence interval (IRR = 0.30, 95% CI .08, 1.10) that make inferences less certain.

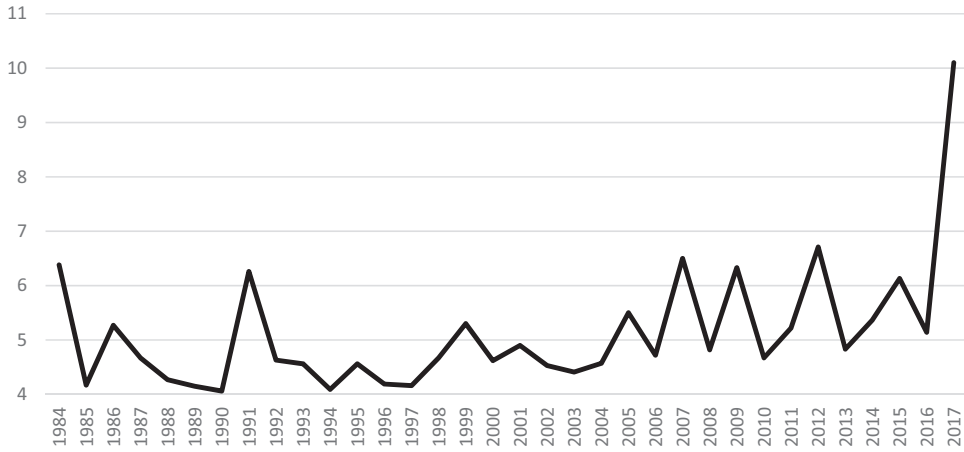

FIGURE 2 Mean number of victims murdered per incident in shootings involving 4+ victim fatalities, 1984–2017

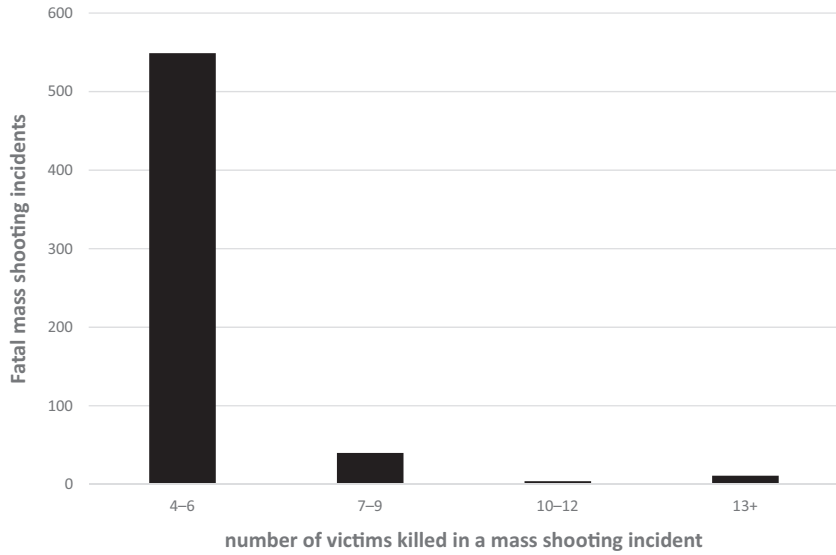

FIGURE 3 Number of incidents of fatal mass shootings by the number of victims killed, united states, 1984–2017

Models for the incidence of mass shootings with domestic or intimate partner violence links revealed no significant associations with laws prohibiting firearms for domestic violence abusers or violent misdemeanants, or purchaser licensing laws (Table 4). LCM bans, however, were associated with a 61% lower rate of domestic mass shootings (IRR = 0.39, 95% CI 0.21, 0.73). The association for LCM bans was somewhat stronger in models for the number of victim fatalities in mass shootings (IRR = 0.25, 95% CI 0.11, 0.59). CBC laws were associated with large increases in domestic mass shooting victim counts (IRR = 2.23, 95% CI 1.10, 4.51).

Purchaser licensing laws were associated with a 62% lower incidence of non–domestic-linked fatal mass shootings (IRR = 0.38, 95% CI 0.20, 0.70) in the full model (Table 5). If the proxy for gun ownership is left out of the model, the IRR is similar (IRR = 0.39, 95% CI 0.22, 0.67). LCM bans were

TABLE 2 Descriptive statistics for independent variables used in the analyses

Variable	Mean	Min	Max	SD
Concealed carry permits—May issue as reference No issue	.14	0	1	.35
Shall issue with discretion	.21	0	1	.41
Strict shall issue	.28	0	1	.45
Permitless	.05	0	1	.21
Purchaser licensing with discretion	.07	0	1	.25
Purchaser licensing in-person application/fingerprint required	.17	0	1	.37
Comprehensive background check—point of sale	.09	0	1	.28
DVRO firearm prohibition w/ final order, no dating partners	.04	0	1	.20
DVRO firearm prohibition includes ex parte	.22	0	1	.41
DVRO firearm prohibition includes dating partners	.27	0	1	.44
DVRO firearm prohibition surrender provision	.28	0	1	.45
Violent misdemeanor	.13	0	1	.34
Federal assault weapon ban	.29	0	1	.46
State assault weapon ban	.08	0	1	.26
Large-capacity magazine ban	.08	0	1	.27
Gun ownership (firearm suicides/all suicides)	.56	.13	.87	.14
Unemployment (%)	5.76	2.3	14.8	1.91
Percent in poverty	12.84	2.9	27.2	3.79
Percent male	49.16	47.63	52.71	.87
Percent Black	10.91	.28	38.29	9.77
Percent married	54.81	42.26	67.64	4.93
Percent divorced	10.31	4.78	16.54	2.03
Percent veteran	13.10	4.00	21.88	3.87
Percent living in MSA	70.09	14.94	100	19.94
Ethanol consumption per capita	2.40	1.23	5.10	.54
Religious adherence (%)	50.62	22.43	83.97	11.57
Percent Completed high school	83.30	62.59	92.8	5.87
Drug overdose rate	7.30	.14	55.26	6.55
Log proportion aged 15–24	–1.93	–2.15	–1.61	.09

Note. DVRO = domestic violence restraining order; MSA = Metropolitan Statistical Area; SD = standard deviation. Models also include state fixed effects, linear and quadratic time trend terms.
$^{*}p = .05$.

linked with a lower incidence of non–domestic-linked fatal mass shootings in the parsimonious model (IRR = .34, 95% CI .14, .81); however, the IRR estimate for LCM bans of .65 and was not statistically significant in the full model. None of the other firearm laws were associated with the incidence of non–domestic-linked fatal mass shootings.

2.1 | Sensitivity Analyses

The models that assumed gradual effects for bans of assault weapons and large capacity magazines produced somewhat different results (Tables A2–A4). The negative association between LCM bans

TABLE 3 Estimates for incident rate ratio for the incidence of fatal mass shootings

Variable	Incidents (n = 604) IRR	95% CI	Victim Deaths (n = 2,976) IRR	95% CI
Concealed carry permits—May issue as reference No issue	.93	[.55, 1.58]	1.53	[.82, 2.85]
Shall issue with discretion	.91	[.51, 1.60]	1.14	[.60, 2.19]
Strict shall issue	1.28	[.72, 2.27]	1.44	[.70, 2.94]
Permitless	1.29	[.50, 3.29]	1.02	[.32, 3.28]
Purchaser licensing in-person application/fingerprint required	**.44***	[.26, .73]	**.43***	[.26, .73]
Comprehensive background check—point of sale	1.10	[.77, 1.58]	1.43	[.74, 2.77]
DVRO firearm prohibition w/ final order, no dating partners	.86	[.42, 1.77]	.72	[.33, 1.59]
DVRO firearm prohibition includes ex parte	1.10	[.76, 1.58]	1.13	[.71, 1.77]
DVRO firearm prohibition includes dating partners	.89	[.56, 1.42]	.91	[.50, 1.65]
DVRO firearm prohibition surrender provision	.76	[.50, 1.16]	.75	[.44, 1.27]
Violent misdemeanor	1.51	[.79, 2.89]	1.25	[.63, 2.46]
Federal assault weapon ban	.92	[.67, 1.26]	.96	[.63, 1.46]
State assault weapon ban	.71	[.34, 1.48]	1.11	[.30, 4.16]
Large-capacity magazine ban	**.52***	[.27, .98]	.30	[.08, 1.10]
Gun ownership	.15	[.00, 4.76]	.96	[.93, 1.00]
Unemployment	1.03	[.95, 1.10]	1.02	[.92, 1.13]
Percent in poverty	1.01	[.95, 1.07]	1.00	[.93, 1.07]
Percent male	.80	[.37, 1.70]	.84	[.36, 1.94]
Percent Black	1.07	[.91, 1.26]	1.18	[.96, 1.45]
Percent married	1.03	[.94, 1.13]	1.00	[.89, 1.11]
Percent divorced	1.03	[.80, 1.32]	.99	[.74, 1.32]
Percent veteran	**.86***	[.75, .99]	.92	[.78, 1.09]
Percent living in MSA	1.00	[.98, 1.03]	1.00	[.97, 1.02]
Ethanol consumption per capita	1.10	[.40, 3.03]	.80	[.24, 2.69]
Religious adherence	1.01	[.97, 1.06]	.99	[.93, 1.04]
Percent completed high school	1.05	[.98, 1.13]	1.06	[.97, 1.16]
Drug overdose rate	1.01	[.97, 1.05]	.99	[.95, 1.03]
Log proportion aged 15–24	**.06***	[.00, .99]	.99	[.95, 1.03]

Note. CI = confidence interval; DVRO = domestic violence restraining order; IRR = incident rate ratio; MSA = Metropolitan Statistical Area; SD = standard deviation. Models also include state fixed effects, linear and quadratic time trend terms.
*$p = .05$.

and total fatal mass shootings (IRR = 0.74, 95% CI 0.42, 1.31) and the number of victims killed in mass shootings (IRR = 0.38, 95% CI 0.10, 1.44) was no longer statistically significant in the full model, but it was associated with lower incidence in the parsimonious model for all fatal mass shootings (IRR = 0.54, 95% CI 0.29, 1.00). For domestic-linked mass shootings, LCM bans were associated with lower incidence in the parsimonious model for (IRR = 0.58, 95% CI 0.36, 0.94) and with fewer victim fatalities in the full model (IRR = 0.31, 95% CI 0.11, 0.86). Purchaser licensing laws were associated with lower incidence of total fatal mass shootings (IRR = 0.46, 95% CI 0.27, 0.77) and lower incidence rates for non–domestic-linked fatal mass shootings (IRR = 0.42, 95% CI 0.22, 0.77).

TABLE 4 Estimates for incident rate ratio for domestic-linked mass shootings

Variable	Incidents (n = 182) IRR	95% CI	Victim Deaths (n = 842) IRR	95% CI
Concealed Carry Permit—May issue reference No issue	.66	[.26, 1.68]	.74	[.27, 2.08]
Shall issue w/discretion	.98	[.41, 2.34]	.81	[.33, 2.00]
Strict shall issue	.90	[.33, 2.46]	.78	[.25, 2.48]
Permitless	2.33	[.35, 15.70]	1.43	[.16, 13.21]
Purchaser licensing in-person application or fingerprint required	.93	[.39, 2.19]	1.43	[.60, 3.39]
Comprehensive background checks—point of sale	1.88	[.92, 3.85]	**2.22***	[1.10, 4.50]
DVRO prohibition—final orders, dating partner excluded	.89	[.31, 2.56]	.69	[.22, 2.13]
DVRO prohibition ex parte included	1.51	[.84, 2.71]	1.42	[.74, 2.74]
DVRO includes dating partners	.91	[.57, 1.43]	.80	[.50, 1.30]
DVRO surrender required	.85	[.45, 1.64]	.82	[.40, 1.67]
Violent misdemeanor prohibition	1.86	[.45, 7.69]	2.08	[.57, 7.60]
Federal assault weapons/LCM ban	.87	[.50, 1.51]	.84	[.46, 1.55]
State assault weapons ban	.40	[.14, 1.19]	.42	[.13, 1.32]
Large-capacity magazine ban	**.39***	[.21, .73]	**.25***	[.11, .59]
Gun ownership	.06	[.00, 8.9]	.96	[.89, 1.04]
Unemployment	1.05	[.91, 1.21]	1.09	[.92, 1.29]
Percent in poverty	1.01	[.89, 1.15]	1.00	[.87, 1.14]
Percent male	1.02	[.28, 3.68]	1.08	[.23, 5.03]
Percent Black	1.00	[.81, 1.24]	1.03	[.81, 1.30]
Percent married	.96	[.82, 1.13]	.97	[.82, 1.16]
Percent divorced	.90	[.61, 1.32]	.91	[.58, 1.43]
Percent veteran	1.00	[.83, 1.22]	1.08	[.89, 1.31]
Percent living in MSA	1.00	[.95, 1.05]	.98	[.93, 1.03]
Ethanol consumption per capita	.91	[.14, 6.00]	.79	[.11, 5.78]
Religious adherence	1.02	[.94, 1.10]	1.00	[.92, 1.08]
Percent completed high school	1.02	[.91, 1.14]	.99	[.88, 1.12]
Drug overdose rate	.98	[.92, 1.04]	.97	[.91, 1.04]
Log proportion aged 15–24	1.26	[.02, 95.3]	1.02	[.78, 1.34]

Note. CI = confidence interval; DVRO = domestic violence restraining order; IRR = incident rate ratio; MSA = Metropolitan Statistical Area; SD = standard deviation. Models also include state fixed effects, linear and quadratic time trend terms.
*p = .05.

When we used year fixed effects to account for unmeasured national trends in mass shootings, our point estimates for the gun law variables were similar to those in our primary models with linear and quadratic trend terms; however, the confidence intervals for the estimates expanded and the association between LCM bans and the incidence (.56, 95% CI .27, 1.16) and fatalities for all mass shootings (IRR = .37, 95% CI .11, 1.31) were no longer statistically significant at the .05 level (Table A5). Negative associations for LCM bans and the incidence and number of fatalities for domestic-linked mass shootings and negative associations between purchaser licensing and non–domestic-linked mass

TABLE 5 Estimates for models for mass shooting incidents not linked to domestic violence

Variable	Incidents (n = 401) IRR	95% CI	Victim Deaths (n = 2,057) IRR	95% CI
Concealed carry permit—may issue reference No issue	1.02	[.51, 2.05]	1.82	[.85, 3.90]
Shall issue with discretion	.84	[.38, 1.86]	1.19	[.50, 2.79]
Strict shall issue	1.52	[.86, 2.70]	1.83	[.89, 3.79]
Permitless	.68	[.26, 1.79]	1.10	[.25, 4.81]
Purchaser licensing in-person or fingerprint required	**.38***	[.21, .70]	**.35***	[.19, .63]
Comprehensive background check—point of sale	.84	[.48, 1.47]	1.09	[.44, 2.70]
DVRO prohibition—final orders, dating partner excluded	.88	[.32, 2.44]	.72	[.24, 2.19]
DVRO prohibition includes Ex Parte	1.02	[.53, 1.96]	1.17	[.59, 2.30]
DVRO prohibition Inc. Dating Partners	.88	[.44, 1.77]	.94	[.40, 2.19]
DVRO prohibition with Surrender Provision	.75	[.35, 1.60]	.84	[.35, 1.99]
Violent misdemeanor prohibition	1.32	[.65, 2.68]	.94	[.46, 1.91]
Federal assault weapon ban	.98	[.65, 1.46]	1.11	[.67, 1.85]
State assault weapon ban	.73	[.31, 1.72]	1.01	[.25, 4.11]
Large capacity magazine ban	.65	[.26, 1.63]	.43	[.10, 1.81]
Gun ownership	.77	[.01, 47.8]	.97	[.93, 1.02]
Unemployment	1.04	[.97, 1.11]	1.02	[.93, 1.12]
Percent in poverty	1.00	[.93, 1.07]	.98	[.90, 1.07]
Percent male	.67	[.26, 1.68]	.66	[.24, 1.81]
Percent Black	1.08	[.87, 1.33]	1.26	[.93, 1.69]
Percent married	1.06	[.92, 1.22]	.98	[.84, 1.14]
Percent divorced	1.10	[.77, 1.56]	.94	[.64, 1.38]
Percent Veteran	**.79***	[.66, .96]	.89	[.70, 1.13]
Percent living in MSA	1.01	[.98, 1.05]	1.01	[.97, 1.06]
Ethanol consumption per capita	1.20	[.26, 5.50]	.93	[.15, 5.78]
Religious adherence	1.01	[.95, 1.08]	.99	[.91, 1.07]
Percent completed high school	1.05	[.94, 1.18]	1.09	[.96, 1.23]
Drug overdose rate	1.03	[.99, 1.08]	1.01	[.96, 1.06]
Log proportion aged 15–24	.02	[.00, 1.46]	.78	[.53, 1.15]

Note. CI = confidence interval; DVRO = domestic violence restraining order; IRR = incident rate ratio; MSA = Metropolitan Statistical Area; SD = standard deviation. Models also include state fixed effects, linear and quadratic time trend terms.
*$p = .05$.

shootings were consistent with our primary models (Tables A6–A7). When we used Poisson fixed-effects regression models, our estimates for the association between the firearm laws of interest and fatal mass shootings were consistent with the estimates in our primary models (Tables A8-A10).

To evaluate whether particularly fatal mass shootings led to passage of the policies at interest, we conducted an analysis that omitted certain observations. We determined that, after a mass shooting with 10 or more fatalities, only two states adopted a law that showed a statistically significant effect in our main models: Connecticut and Colorado both adopted LCM bans after major mass shootings in 2012. We omitted the 2012 observations for these two states and repeated our analysis. When these

observations were omitted, the point estimate for purchaser licensing was similar to our main model of all mass shooting incidents (IRR = .40, 95% CI .23, .69; Table A11) and fatalities (IRR = .33, 95% CI .19, .59). Similarly purchaser licensing was associated with reductions in non–domestic-linked mass shootings (IRR = .38, 95% CI .20, .70; Table A13) and fatalities (IRR = .34, 95% CI .18, .62). For all mass shootings, LCM bans estimates were similar to our primary models but no longer statistically significant for incidents (IRR = .56, 95% CI .30, 1.03; Tale A11) and fatalities (IRR = .40, 95% CI .14, 1.14). LCM bans were statistically significant and protective for domestic-linked mass shooting incidents (IRR = .46, 95% CI .23, .89; Table A12) and fatalities (IRR = .45, 95% CI .22, .91).

In the models using different victim fatality thresholds for mass-shootings (five and six victims), the data were too sparse to stratify by domestic violence link. When mass shootings were limited to those with five or more victims (n = 198 shootings), LCM bans were associated with an 80% lower incidence in the full model (IRR = .20, 95% CI .06, .67; Table A14). Although the point estimate for purchaser licensing laws was similar to that for the models with four victim fatality thresholds, it was not statistically significant (IRR = .52, 95% CI .15, 1.83). The estimate for No Issue concealed carry permit laws did change dramatically with the five-fatality threshold and was associated with much higher incidence of fatal mass shootings (IRR = 4.14, 95% CI 1.57, 10.87; Table A14). No Issue concealed carry laws no longer exist, however, as every state now allows for some form of civilian concealed carry. Similarly, when mass shootings were limited to those with six or more victims (Table A15), LCM bans were associated with an 87% lower incidence in the full model (IRR = .14, 95% CI .03, .70) and purchaser licensing laws were not associated with any change.

3 | DISCUSSION

The rate at which Americans are murdered in mass shootings has increased in recent years. For decades, horrific mass shootings have prompted intense political debates about whether such incidents can be prevented and what would be the most effective policy responses. Prior research on the effects of firearm policies on fatal mass shootings has important limitations, leaving questions about the effectiveness of strengthened gun regulations such as comprehensive background checks or policies that have been implemented to encourage more civilian gun carrying in public places.

The findings of this study suggest that the most common policy prescriptions offered by advocates on each side of the debate over gun control—comprehensive background checks and assault weapons bans on one side and so-called "Right to Carry" laws reducing restrictions on civilian concealed carry of firearms on the other side—do not seem to be associated with the incidence of fatal mass shootings. Twenty-eight percent of the shootings in this study had some connection to domestic violence, yet we found no evidence that laws designed to keep firearms from perpetrators of domestic violence have affected mass shootings connected to domestic violence. This is somewhat surprising given prior research demonstrating that laws prohibiting persons under domestic violence restraining orders from possessing firearms or with prior convictions for violent misdemeanors were associated with reduced intimate partner homicides (Zeoli et al., 2018).

This study identified two policies associated with reductions in fatal mass shootings—laws requiring firearm purchasers or owners to acquire a license that involves in-person application and/or fingerprinting of applicants and state laws banning the purchase of LCMs or ammunition-feeding devices for semiautomatic firearms. The size of the estimated protective effects of these two policies are striking, although there are large confidence intervals. Firearm purchaser or owner licensing laws have been shown to reduce firearm homicides (Crifasi et al., 2018; Hasegawa, Small, & Webster, 2019; Rudolph et al., 2015; Webster, Crifasi, & Vernick, 2014) and suicides (Crifasi et al., 2015); thus, it

is plausible that these laws reduce firearm availability to individuals who are at risk of committing many forms of lethal violence including multivictim fatal shootings. States with licensing requirements for firearm purchasers typically review broader types of data to identify conditions that prohibit firearm possession and use fingerprints to identify individuals with criminal histories rather than rely solely on biographical information provided by the applicant. In addition, rigorous firearm purchaser licensing may also reduce illegal straw sales and other types of diversion of guns for criminal use (Crifasi, Buggs, Choksy, & Webster, 2017).

Assault rifles are commonly used in mass shootings with the most casualties, and certain design features of these weapons plausibly facilitate the ability of an assailant to rapidly shoot many rounds (e.g., barrel shrouds and pistol grips). But the capacity of the ammunition-feeding device and the ability to quickly reload may be the most relevant feature of firearms that influence the incidence and outcomes of mass shootings. Furthermore, most mass shootings do not involve assault rifles, but many involve the use of LCMs. This may explain why we found that LCM bans were associated with significant reductions in the incidence of fatal mass shootings but that bans on assault weapons had no clear effects on either the incidence of mass shootings or on the incidence of victim fatalities from mass shootings. Studies that have collected detailed data on the specific firearms used in fatal mass shootings show that firearms with LCMs are used roughly twice as frequently as firearms identified as assault weapons. In the Koper et al. (2018) study of mass shootings with four or more victim fatalities during 2009–2016, 19% involved firearms with an LCM and 10% involved firearm models classified as assault weapons. Additionally, Klarevas (2016) found that, during 2006–2015 (after the federal ban expired), 67% of mass shootings with six or more victim fatalities involved the use of an LCM versus 26% with an assault weapon model. Based on the data from Koper (2020), Koper et al. (2018), and Klarevas (2016), our point estimates may be somewhat higher than would be plausible based on the prevalence of LCM use in fatal public mass shootings, although the confidence intervals for these estimates are wide and encompass the estimates of the prevalence of use of LCMs in fatal mass shootings. Also, Koper (2013) found no evidence of decreased use of LCMs in the years after the federal ban in data from four cities that collected such data. This suggests that the supply of pre-ban LCMs was plentiful and that LCMs bans may take years to sufficiently reduce their availability for criminal misuse. Yet our models estimating gradual effects of state LCM bans showed weaker law effects than did the models assuming immediate effects. Passage of LCM bans may coincide with unmeasured factors related to protection against fatal mass shootings other than the comprehensive list of firearm laws examined here. Regardless, there is a clear functional link between LCMs and the ability of a shooter to take more lives. Our estimates of LCM ban impacts show the largest protective effects on high-fatality count shootings and on the number of victims murdered in mass shootings, and the point estimates are large in all model specifications.

It should be noted that the federal assault weapons ban and some state bans of assault weapons have resulted in gun manufacturers making slight alterations in the characteristics of weapon models that are banned. These newer models, assault weapons that were grandfathered by the bans, and the ability to purchase components of assault weapons online provide substitutes for the banned firearms for individuals considering carrying out acts of mass violence. LCM bans may be less likely to result in acquisition of equivalent substitutes as is the case for assault weapon bans.

There are limitations to this study that relate to the lack of systematic data at the state level on determinants of mass shootings that would aid in the modeling of state-level trends of rare events. We drew from prior research on factors associated with state-level rates of homicides and suicides. Mass shootings involve a very small proportion of such events, however, and the conditions that facilitate or suppress lethal violence overall may not explain rare and especially lethal mass shooting events. In addition, this study was not designed to fully explore the relationship between assault weapon bans and their

impact on fatal mass shootings. We did not examine, for example, whether the bans influenced the incidence of assault weapons being used in mass shootings because such data are not available for all fatal mass shootings. We also only examined fatal mass shootings, in which the number of fatalities rather than casualties determined whether an incident was included in the analysis. Booty, O'Dwyer, Webster, McCourt, and Crifasi (2019) have raised the issue of inconsistencies in mass shooting databases that define "mass shooting" differently, and we acknowledge that our results are influenced by the definition that we have chosen.

Despite these limitations, our estimates of the effects of state and federal gun laws on fatal mass shootings are mainly robust to different modeling assumptions and consistent with other research findings. Firearm purchaser licensing requirements are likely to reduce overall firearm availability within a state as well as reduce firearm availability to high-risk individuals. This study provides evidence that firearm purchaser or ownership licensing with fingerprinting reduce the risk of fatal mass shootings in addition to firearm homicides more broadly. LCM bans also seem to reduce the incidence of fatal mass shootings and the number of fatalities in mass shootings. Policy makers should consider these findings when crafting proposals to reduce deaths from mass shootings.

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ENDNOTES

[1] The researchers used *Traveler's Guide to the Firearms Laws of the Fifty States* that provides annual ratings for the restrictiveness–permissiveness scale of U.S. gun laws for each state based on assessments of legal professionals who represent gun owners in legal cases. This publication gives a rating between 0 (completely restrictive) and 100 (completely permissive).

[2] *Stanford Mass Shootings in America* collected data on incidents with three or more shooting casualties in a public place, excluding incidents related to gang or narcotic involvement; this data source ceased data collection in early 2016. The Gun Violence Archive (GVA) is a publicly available data source that collects information on incidents that had four or more shooting casualties, but a search query can restrict information to four or more fatalities. Twenty-three incidents were added from Stanford, and 10 incidents were added from GVA.

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APPENDIX

TABLE A1 Mean annual mass shooting rate and fatality rate by state

State	All Fatal Mass Shootings		Domestic-Linked Mass Shootings		Non–Domestic-Linked Mass Shootings	
	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population
Alabama	.04	.21	.01	.09	.02	.08
Alaska	.06	.40	.00	.00	.06	.40
Arizona	.11	.53	.03	.13	.07	.33
Arkansas	.13	.69	.02	.15	.11	.54
California	.06	.32	.03	.13	.03	.19
Colorado	.07	.39	.01	.05	.05	.31
Connecticut	.06	.48	.02	.26	.04	.22
Delaware	.00	.00	.00	.00	.00	.00
Georgia	.06	.28	.02	.08	.04	.20
Hawaii	.05	.25	.03	.10	.02	.15
Idaho	.09	.40	.03	.12	.06	.28
Illinois	.05	.22	.01	.03	.03	.17
Indiana	.09	.40	.04	.16	.06	.24
Iowa	.02	.10	.01	.05	.00	.00
Louisiana	.11	.46	.02	.09	.09	.37
Maine	.08	.30	.05	.20	.02	.10
Maryland	.04	.17	.02	.09	.02	.09
Massachusetts	.02	.09	.005	.02	.01	.07

(Continues)

TABLE A1 (Continued)

State	All Fatal Mass Shootings		Domestic-Linked Mass Shootings		Non–Domestic-Linked Mass Shootings	
	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population
Michigan	.11	.46	.03	.14	.07	.32
Minnesota	.03	.15	.01	.02	.02	.08
Mississippi	.09	.43	.00	.00	.07	.43
Missouri	.08	.35	.02	.07	.06	.28
Nevada	.08	.86	.03	.13	.05	.73
New Hampshire	.03	.12	.00	.00	.03	.12
New Jersey	.03	.11	.01	.03	.02	.08
New Mexico	.12	.59	.06	.29	.06	.30
New York	.05	.24	.01	.03	.04	.21
North Carolina	.11	.46	.01	.03	.10	.43
North Dakota	.14	.54	.14	.54	.00	.00
Ohio	.07	.29	.02	.08	.05	.21
Oklahoma	.08	.42	.03	.16	.04	.26
Oregon	.06	.30	.04	.17	.01	.03
Pennsylvania	.04	.19	.02	.07	.02	.12
Rhode Island	.00	.00	.00	.00	.00	.00

(Continues)

TABLE A1 (Continued)

State	All Fatal Mass Shootings		Domestic-Linked Mass Shootings		Non–Domestic-Linked Mass Shootings	
	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population	Mean Annual Rate of Mass Shootings per 1 Million Population	Mean Annual Rate of Fatalities from Mass Shootings per 1 Million Population
South Carolina	.18	.88	.05	.20	.14	.68
South Dakota	.08	.34	.08	.34	.00	.00
Tennessee	.07	.29	.02	.07	.05	.20
Texas	.09	.47	.02	.11	.06	.34
Utah	.07	.40	.04	.19	.04	.21
Vermont	.10	.38	.00	.00	.10	.38
Virginia	.08	.48	.03	.13	.06	.35
Washington	.08	.38	.03	.12	.05	.26
West Virginia	.14	.64	.08	.34	.06	.30
Wisconsin	.04	.24	.01	.06	.03	.15
Wyoming	.12	.47	.12	.47	.00	.00
Overall	.07	.36	.03	.12	.04	.23

TABLE A2 Estimates for incident rate ratios for all fatal mass shootings using gradual assault weapon and LCM ban variables

Variable	All Fatal Mass Shooting Incidents (n = 604 shootings)		Fatalities in All Fatal Mass Shootings (n = 2,976 fatalities)	
	IRR (IRR[a])	95% CI (95% CI[a])	IRR (IRR)	95% CI (95% CI)
Concealed carry permits—may issue as reference	.94	[.55, 1.59]	1.53	[.83, 2.84]
No issue	(.97)	(.58, 1.63)	(1.45)	(.78, 2.68)
Shall issue with discretion	.95	[.54, 1.69]	1.15	[.59, 2.22]
	(.88)	(.50, 1.55)	(1.08)	(.54, 2.18)
Strict shall issue	1.34	[.75, 2.39	1.46	[.71, 2.98]
	(1.20)	(.72, 1.99)]	(1.36)	(.75, 2.47)
Permitless	1.35	[.52, 3.51]	1.02	[.31, 3.36]
	(1.24)	(.50, 3.03)	(.95)	(.30, 3.07)
Purchaser licensing[b]	**.46***	[.27, .77]	**.44***	[.24, .82]
	(.50)	(.34, .73)	(.62)	(.35, 1.07)
Comprehensive background check—point of sale	1.08	[.75, 1.55]	1.42	[.73, 2.79]
	(1.12)	(.78, 1.62)	(1.57)	(.72, 3.43)
DVRO firearm prohibition no dating partners	.83	[.40, 1.72]	.70	[.31, 1.62]
	(.94)	(.43, 2.04)	(.65)	(.30, 1.42)
DVRO firearm prohibition includes ex parte	1.08	[.74, 1.57]	1.10	[.69, 1.76]
	(1.04)	(.68, 1.57)	(.98)	(.59, 1.63)
DVRO firearm prohibition Includes dating partners	.93	[.58, 1.50]	.94	[.51, 1.70]
	(.89)	(.55, 1.42)	(.90)	(.50, 1.63)
DVRO firearm prohibition surrender provision	.75	[.48, 1.15]	.74	[.43, 1.25]
	(.77)	(.48, 1.25)	(.84)	(.48, 1.46)
Violent misdemeanor	1.50	[.82, 2.73]	1.30	[.67, 2.54]
	(1.48)	(.77, 2.84)	(1.30)	(.59, 2.87)
Federal assault weapon ban (gradual)	.95	[.70, 1.29]	1.02	[.65, 1.60]
	(.96)	(.70, 1.32)	(1.06)	(.70, 1.60)
State assault weapon ban (gradual)	.64	[.35, 1.18]	1.01	[.29, 3.47]
	(.66)	(.30, 1.48)	(.90)	(.21, 3.76)
Large-capacity magazine ban (gradual)	.74	[.42, 1.31]	.38	[.10, 1.44]
	(.54)	(.29, 1.00)	(.40)	(.10, 1.60)
Gun ownership	.98	[.95, 1.02]	.96	[.93, 1.00]
Unemployment	1.02	[.95, 1.10]	1.02	[.92, 1.13]
Percent in poverty	1.01	[.95, 1.07]	1.00	[.93, 1.07]
Percent male	.84	[.39, 1.78]	.85	[.37, 1.95]
Percent Black	1.07	[.91, 1.26]	1.19	[.96, 1.46]
Percent married	1.02	[.93, 1.13]	.99	[.88, 1.11]
Percent divorced	1.04	[.80, 1.33]	.99	[.74, 1.32]

(Continues)

TABLE A2 (Continued)

Variable	All Fatal Mass Shooting Incidents (n = 604 shootings)		Fatalities in All Fatal Mass Shootings (n = 2,976 fatalities)	
	IRR (IRR[a])	95% CI (95% CI[a])	IRR (IRR)	95% CI (95% CI)
Percent veteran	**.87***	[.76, .99]	.94	[.79, 1.10]
Percent living in MSA	1.00	[.98, 1.03]	1.00	[.97, 1.03]
Ethanol consumption per capita	1.13	[.42, 3.02]	.82	[.26, 2.64]
Religious adherence	1.02	[.97, 1.06]	.99	[.93, 1.04]
Percent completed high school	1.06	[.98, 1.14]	1.06	[.98, 1.16]
Drug overdose rate (per 100,000)	1.01	[.97, 1.05]	.99	[.95, 1.03]
Percent aged 15–24	.84	[.69, 1.02]	.88	[.71, 1.09]
Linear time trend	.91	[.80, 1.04]	.90	[.77, 1.04]
Quadratic time trend	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]

[a]Parsimonious model results.

[b]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*$p = .05$.

TABLE A3 Estimates for incident rate ratios for domestic-linked fatal mass shootings using gradual assault weapon and LCM ban variables

Variable	Domestic-Linked Fatal Mass Shooting incidents (n = 182 shootings)		Fatalities in Domestic-Linked Mass Shootings (n = 842 fatalities)	
	IRR (IRR[a])	95% CI (95% CI[a])	IRR (IRR)	95% CI (95% CI)
Concealed carry permit—may issue reference	.69	[.28, 1.74]	.80	[.29, 2.16]
No issue	(.67)	(.30, 1.51)	(.76)	(.31, 1.87)
Shall issue w/ discretion	1.02	[.42, 2.48]	.83	[.33, 2.07]
	(1.04)	(.46, 2.37)	(.89)	(.37, 2.14)
Strict shall issue	.94	[.35, 2.55]	.82	[.27, 2.55]
	(.96)	(.40, 2.28)	(.91)	(.33, 2.49)
Permitless	2.32	[.34, 15.75]	1.45	[.16, 13.37]
	(1.98)	(.33, 12.01)	(1.37)	(.16, 12.03)
Purchaser licensing[b]	.89	[.34, 2.37]	1.23	[.44, 3.42]
	(.80)	(.33, 1.93)	(1.53)	(.63, 3.77)
Comprehensive background checks—point of sale	1.79	[.89, 3.59]	**2.07***	[1.03, 4.17]
	(1.77)	(.90, 3.48)	**(2.20)***	(1.12, 4.32)
DVRO prohibition—final orders, dating partner excluded	.84	[.29, 2.45]	.66	[.21, 2.11]
	(.79)	(.33, 1.88)	(.49)	(.20, 1.22)
DVRO prohibition ex parte included	1.46	[.83, 2.58]	1.36	[.71, 2.61]
	(1.47)	(.85, 2.57)	(1.24)	(.63, 2.41)
DVRO includes dating partners	.93	[.59, 1.47]	.83	[.52, 1.33]
	(.89)	(.55, 1.45)	(.79)	(.46, 1.35)
DVRO surrender required	.82	[.42, 1.60]	.77	[.37, 1.60]
	(.85)	(.46, 1.58)	(.90)	(.45, 1.81)
Violent misdemeanor prohibition	1.61	[.45, 5.83]	1.87	[.57, 6.12]
	(1.89)	(.56, 6.37)	(2.15)	(.65, 7.14)
Federal assault weapons/LCM ban (gradual)	1.28	[.66, 2.48]	1.25	[.60, 2.59]
	(.93)	(.58, 1.51)	(.85)	(.49, 1.48)
State assault weapons ban (gradual)	.50	[.17, 1.43]	.62	[.19, 2.04]
	(.51)	(.19, 1.36)	(.68)	(.20, 2.33)
Large-capacity magazine ban (gradual)	.52	[.26, 1.02]	**.31***	[.11, .86]
	(.58)*	(.36, .94)	(.37)	(.13, 1.11)
Gun ownership	.97	[.90, 1.02]	.97	[.89, 1.04]
Unemployment	1.05	[.91, 1.22]	1.10	[.93, 1.30]
Percent in poverty	1.01	[.89, 1.15]	1.00	[.88, 1.14]
Percent male	.96	[.27, 3.48]	1.01	[.22, 4.67]
Percent Black	1.02	[.82, 1.28]	1.06	[.83, 1.34]
Percent married	.91	[.77, 1.08]	.92	[.76, 1.11]

(Continues)

TABLE A3 (Continued)

Variable	Domestic-Linked Fatal Mass Shooting incidents (n = 182 shootings)		Fatalities in Domestic-Linked Mass Shootings (n = 842 fatalities)	
	IRR (IRR[a])	95% CI (95% CI[a])	IRR (IRR)	95% CI (95% CI)
Percent divorced	.86	[.59, 1.27]	.88	[.56, 1.38]
Percent veteran	1.05	[.88, 1.24]	1.13	[.94, 1.36]
Percent living in MSA	1.00	[.95, 1.05]	.98	[.93, 1.03]
Ethanol consumption per capita	1.24	[.20, 7.88]	1.12	[.16, 7.90]
Religious adherence	1.02	[.94, 1.10]	1.00	[.93, 1.08]
Percent completed high school	1.01	[.91, 1.13]	.98	[.87, 1.10]
Drug overdose rate	.98	[.92, 1.04]	.97	[.91, 1.04]
Percent aged 15–24	1.00	[.74, 1.34]	1.01	[.75, 1.34]
Linear time trend	.97	[.77, 1.21]	1.00	[.79, 1.26]
Quadratic time trend	1.00	[1.00, 1.01]	1.00	[1.00, 1.01]

[a]Parsimonious model results.

[b]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*p = .05.

TABLE A4 Estimates for incident rate ratios for non–domestic-linked fatal mass shootings using gradual assault weapon And LCM ban variables

Variable	Non–Domestic-Linked Fatal Mass Shooting incidents (n = 401 shootings)		Fatalities in Non–Domestic-Linked Mass Shootings (n = 2,057 fatalities)	
	IRR (IRR[a])	95% CI (95% CI[a])	IRR (IRR)	95% CI (95% CI)
Concealed carry permit—may issue reference	1.01	[.50, 2.01]	1.78	[.84, 3.80]
No issue	(1.12)	(.55, 2.30)	(1.74)	(.82, 3.68)
Shall issue w/ discretion	.91	[.41, 2.02]	1.20	[.50, 2.89]
	(.81)	(.36, 1.83)	(1.00)	(.41, 2.43)
Strict shall issue	1.66	[.95, 2.92]	1.85	[.90, 3.83]
	(1.43)	(.87, 2.35)	(1.60)	(.88, 2.93)
Permitless	.75	[.28, 2.04]	1.12	[.25, 5.09]
	(.71)	(.27, 1.87)	(1.02)	(.22, 4.73)
Purchaser licensing[b]	**.42***	[.22, .77]	**.38***	[.20, .73]
	(.43)*	(.25, .72)	**(.48)***	(.26, .91)
Comprehensive background checks—point of sale	.81	[.46, 1.45]	1.07	[.43, 2.68]
	(.86)	(.48, 1.54)	(1.27)	(.42, 3.87)
DVRO prohibition—final orders, dating partner excluded	.84	[.30, 2.39]	.71	[.23, 2.22]
	(1.07)	(.34, 3.37)	(.78)	(.24, 2.57)
DVRO prohibition ex parte included	1.01	[.53, 1.94]	1.16	[.59, 2.30]
	(.94)	(.43, 2.03)	(1.09)	(.50, 2.35)
DVRO includes dating partners	.94	[.47, 1.89]	.97	[.41, 2.29]
	(.86)	(.43, 1.72)	(.91)	(.40, 2.08)
DVRO surrender required	.75	[.35, 1.60]	.83	[.35, 1.98]
	(.78)	(.33, 1.86)	(.91)	(.37, 2.26)
Violent misdemeanor prohibition	1.35	[.69, 2.67]	1.02	[.50, 2.07]
	(1.18)	(.57, 2.46)	(.90)	(.38, 2.15)
Federal assault weapons/LCM ban (gradual)	.86	[.59, 1.27]	1.08	[.62, 1.87]
	(.95)	(.66, 1.38)	(1.15)	(.71, 1.86)
State assault weapons ban (gradual)	.58	[.25, 1.33]	.67	[.17, 2.70]
	(.69)	(.27, 1.78)	(.67)	(.15, 2.90)
Large-capacity magazine ban (gradual)	1.10	[.47, 2.56]	.67	[.16, 2.76]
	(.50)	(.23, 1.09)	(.44)	(.11, 1.75)
Gun ownership	1.00	[.96, 1.04]	.97	[.93, 1.02]
Unemployment	1.03	[.96, 1.10]	1.02	[.93, 1.11]
Percent in poverty	1.00	[.93, 1.07]	.98	[.91, 1.07]
Percent male	.74	[.29, 1.86]	.68	[.25, 1.83]
Percent Black	1.08	[.88, 1.32]	1.25	[.93, 1.69]
Percent married	1.07	[.92, 1.24]	.98	[.83, 1.15]

(Continues)

TABLE A4 (Continued)

Variable	Non–Domestic-Linked Fatal Mass Shooting incidents (n = 401 shootings)		Fatalities in Non–Domestic-Linked Mass Shootings (n = 2,057 fatalities)	
	IRR (IRR[a])	95% CI (95% CI[a])	IRR (IRR)	95% CI (95% CI)
Percent divorced	1.13	[.79, 1.60]	.94	[.64, 1.38]
Percent veteran	**.79***	[.66, .95]	.89	[.70, 1.12]
Percent living in MSA	1.02	[.98, 1.05]	1.01	[.97, 1.06]
Ethanol consumption per capita	1.09	[.25, 4.76]	.88	[.15, 5.13]
Religious adherence	1.02	[.96, 1.08]	.99	[.91, 1.07]
Percent completed high school	1.07	[.95, 1.19]	1.10	[.97, 1.24]
Drug overdose rate	1.04	[1.00, 1.08]	1.01	[.96, 1.06]
Percent aged 15–24	.78	[.56, 1.07]	.78	[.53, 1.15]
Linear time trend	.90	[.77, 1.05]	.88	[.73, 1.05]
Quadratic time trend	1.00	[1.00, 1.00]	1.00	[1.00, 1.01]

[a]Parsimonious model results.

[b]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*$p = .05$.

TABLE A5 Estimates for incident rate ratios for all fatal mass shootings (>3 victim fatalities), using year fixed effects

Variable	All Fatal Mass Shooting Incidents (n = 604 shootings)		Fatalities in All Fatal Mass Shootings (n = 2, 976 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.88	[.52, 1.48]	1.31	[.74, 2.32]
Shall issue w/ discretion	.83	[.47, 1.47]	.98	[.49, 1.95]
Strict shall issue	1.31	[.72, 2.39]	1.38	[.67, 2.84]
Permitless	1.21	[.49, 3.01]	.86	[.27, 2.73]
Purchaser licensing[a]	**.43***	[.26, .70]	**.44***	[.26, .75]
Comprehensive background checks—point of sale	1.00	[.69, 1.44]	1.16	[.63, 2.12]
DVRO prohibition—final orders, dating partner excluded	.94	[.46, 1.91]	.80	[.34, 1.85]
DVRO prohibition ex parte included	1.28	[.86, 1.90]	1.38	[.84, 2.25]
DVRO includes dating partners	.91	[.54, 1.51]	.92	[.48, 1.76]
DVRO surrender required	.69	[.45, 1.04]	.65	[.38, 1.10]
Violent misdemeanor prohibition	1.54	[.81, 2.95]	1.33	[.68, 2.59]
Federal assault weapons/LCM ban (gradual)	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]
State assault weapons ban (gradual)	.60	[.27, 1.35]	.84	[.23, 3.08]
Large-capacity magazine ban (gradual)	.56	[.27, 1.16]	.37	[.11, 1.31]
Gun ownership	.97	[.93, 1.01]	.96	[.92, 1.01]
Unemployment	1.08	[.96, 1.22]	1.06	[.91, 1.25]
Percent in poverty	1.01	[.94, 1.07]	.99	[.92, 1.07]
Percent male	.75	[.38, 1.48]	.63	[.28, 1.43]
Percent Black	1.04	[.88, 1.24]	1.11	[.91, 1.35]
Percent married	1.10	[.98, 1.23]	1.02	[.88, 1.19]
Percent divorced	1.18	[.89, 1.56]	1.07	[.76, 1.51]
Percent veteran	**.69***	[.55, .87]	**.64***	[.48, .84]
Percent living in MSA	1.00	[.98, 1.03]	.99	[.97, 1.02]
Ethanol consumption per capita	1.05	[.39, 2.87]	.86	[.26, 2.81]
Religious adherence	1.01	[.97, 1.05]	.99	[.94, 1.04]
Percent completed high school	1.11	[.98, 1.25]	**1.17***	[1.02, 1.34]
Drug overdose rate	1.00	[.97, 1.03]	.98	[.94, 1.02]
Percent aged 15–24	.92	[.73, 1.15]	.88	[.70, 1.10]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*p = .05.

TABLE A6 Estimates for incident rate ratios for domestic-linked mass shooting (>3 victims), using year fixed effects

Variable	Domestic-Linked Fatal Mass Shooting Incidents (n = 182 shootings)		Fatalities in Domestic-Linked Mass Shootings (n = 842 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.64	[.26, 1.59]	.62	[.24, 1.65]
Shall issue w/ discretion	.90	[.35, 2.31]	.76	[.27, 2.09]
Strict shall issue	.85	[.31, 2.38]	.70	[.23, 2.11]
Permitless	1.92	[.30, 12.36]	1.06	[.12, 9.36]
Purchaser licensing[a]	.84	[.33, 2.16]	1.46	[.57, 3.71]
Comprehensive background checks—point of sale	1.89	[.86, 4.14]	**2.25***	[1.02, 4.96]
DVRO prohibition—final orders, dating partner excluded	.94	[.34, 2.57]	.83	[.28, 2.49]
DVRO prohibition ex parte included	1.65	[.87, 3.16]	1.70	[.81, 3.57]
DVRO includes dating partners	.88	[.54, 1.45]	.83	[.50, 1.39]
DVRO surrender required	.84	[.41, 1.75]	.75	[.33, 1.70]
Violent misdemeanor prohibition	1.90	[.47, 7.77]	1.92	[.52, 7.06]
Federal assault weapons/LCM ban (gradual)	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]
State assault weapons ban (gradual)	.39	[.11, 1.34]	.30	[.09, 1.02]
Large-capacity magazine ban (gradual)	**.39***	[.20, .76]	**.26***	[.11, .60]
Gun ownership	.96	[.89, 1.03]	.95	[.88, 1.02]
Unemployment	1.04	[.82, 1.31]	1.08	[.82, 1.41]
Percent in poverty	1.03	[.91, 1.18]	1.03	[.89, 1.18]
Percent male	1.04	[.29, 3.78]	1.05	[.22, 4.98]
Percent Black	1.00	[.78, 1.29]	1.03	[.78, 1.36]
Percent married	1.02	[.79, 1.30]	1.07	[.82, 1.40]
Percent divorced	1.10	[.65, 1.84]	1.18	[.69, 2.03]
Percent veteran	.97	[.63, 1.49]	1.04	[.64, 1.71]
Percent living in MSA	1.00	[.95, 1.06]	.98	[.93, 1.04]
Ethanol consumption per capita	.64	[.10, 4.05]	.59	[.08, 4.35]
Religious adherence	1.00	[.92, 1.07]	.98	[.90, 1.06]
Percent completed high school	.99	[.81, 1.22]	.94	[.75, 1.16]
Drug overdose rate	.97	[.92, 1.04]	.97	[.91, 1.03]
Percent aged 15–24	1.13	[.81, 1.56]	1.16	[.82, 1.63]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*$p = .05$.

TABLE A7 Estimates for incident rate ratios for non–domestic-linked mass shooting (>3 victims), using year fixed effects

Variable	Non–Domestic-Linked Fatal Mass Shooting incidents (n = 182 shootings)		Fatalities in Non–Domestic-Linked Mass Shootings (n = 2,057 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.92	[.46, 1.84]	1.40	[.70, 2.78]
Shall issue w/ discretion	.75	[.32, 1.74]	.98	[.38, 2.52]
Strict shall issue	1.58	[.86, 2.91]	1.68	[.82, 3.45]
Permitless	.66	[.27, 1.62]	.85	[.23, 3.13]
Purchaser licensing[a]	**.37***	[.21, .67]	**.35***	[.19, .65]
Comprehensive background checks—point of sale	.75	[.43, 1.31]	.83	[.38, 1.83]
DVRO prohibition—final orders, dating partner excluded	.92	[.34, 2.49]	.80	[.25, 2.52]
DVRO prohibition ex parte included	1.19	[.64, 2.22]	1.43	[.72, 2.84]
DVRO includes dating partners	.89	[.43, 1.84]	.91	[.37, 2.27]
DVRO surrender required	.66	[.34, 1.30]	.64	[.29, 1.44]
Violent misdemeanor prohibition	1.30	[.62, 2.72]	.93	[.44, 1.97]
Federal assault weapons/LCM ban (gradual)	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]
State assault weapons ban (gradual)	.62	[.24, 1.61]	.81	[.21, 3.13]
Large-capacity magazine ban (gradual)	.74	[.28, 1.97]	.58	[.15, 2.32]
Gun ownership	.98	[.94, 1.03]	.97	[.92, 1.03]
Unemployment	1.12	[.99, 1.27]	1.11	[.96, 1.28]
Percent in poverty	.99	[.91, 1.08]	.96	[.88, 1.06]
Percent male	.66	[.31, 1.41]	**.40***	[.17, .95]
Percent Black	1.04	[.84, 1.29]	1.15	[.88, 1.50]
Percent married	**1.22***	[1.00, 1.48]	1.08	[.86, 1.36]
Percent divorced	1.26	[.86, 1.87]	1.01	[.64, 1.58]
Percent veteran	**.58***	[.43, .79]	**.52***	[.35, .76]
Percent living in MSA	1.01	[.98, 1.05]	1.01	[.97, 1.05]
Ethanol consumption per capita	1.09	[.26, 4.47]	.98	[.19, 5.03]
Religious adherence	1.02	[.96, 1.08]	1.00	[.92, 1.08]
Percent completed high school	1.16	[.98, 1.36]	**1.27***	[1.05, 1.53]
Drug overdose rate	1.02	[.98, 1.06]	1.00	[.96, 1.05]
Percent aged 15–24	.88	[.59, 1.33]	.76	[.48, 1.21]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*p = .05.

Estimates Using Poisson Fixed-Effects Regression.

TABLE A8 Estimates for incident rate ratios for all fatal mass shootings (>3 victims), using fixed-effects poisson regression

Variable	All Fatal Mass Shooting Incidents (n = 604 shootings)		Fatalities in All Fatal Mass Shootings (n = 2, 976 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.79	[.49, 1.28]	1.07	[.61, 1.85]
Shall issue w/ discretion	.81	[.46, 1.40]	.90	[.47, 1.75]
Strict shall issue	1.11	[.67, 1.83]	1.06	[.61, 1.83]
Permitless	1.22	[.53, 2.76]	.97	[.39, 2.39]
Purchaser licensing[a]	**.49***	[.30, .82]	.61	[.37, 1.01]
Comprehensive background checks—point of sale	1.11	[.79, 1.55]	1.83	[.68, 4.87]
DVRO prohibition—final orders, dating partner excluded	.93	[.44, 1.97]	.79	[.33, 1.88]
DVRO prohibition ex parte included	1.00	[.72, 1.38]	.84	[.57, 1.24]
DVRO includes dating partners	.86	[.58, 1.28]	.85	[.55, 1.32]
DVRO surrender required	.76	[.52, 1.11]	.88	[.53, 1.46]
Violent misdemeanor prohibition	1.42	[.78, 2.59]	.97	[.45, 2.07]
Federal assault weapons/LCM ban (gradual)	.92	[.70, 1.20]	.91	[.67, 1.24]
State assault weapons ban (gradual)	.74	[.45, 1.24]	.93	[.57, 1.52]
Large-capacity magazine ban (gradual)	**.48***	[.28, .82]	**.32***	[.17, .58]
Gun ownership	.99	[.96, 1.02]	.98	[.95, 1.01]
Unemployment	1.04	[.98, 1.10]	1.03	[.95, 1.11]
Percent in poverty	1.00	[.94, 1.05]	.98	[.93, 1.04]
Percent male	.62	[.29, 1.31]	**.43***	[.19, .94]
Percent Black	1.03	[.88, 1.21]	1.12	[.88, 1.43]
Percent married	1.04	[.95, 1.14]	1.01	[.93, 1.10]
Percent divorced	1.01	[.80, 1.28]	1.01	[.76, 1.33]
Percent veteran	**.84***	[.74, .96]	.95	[.80, 1.13]
Percent living in MSA	1.00	[.98, 1.03]	.99	[.97, 1.02]
Ethanol consumption per capita	1.37	[.49, 3.81]	1.06	[.33, 3.37]
Religious adherence	1.02	[.98, 1.07]	1.00	[.94, 1.06]
Percent completed high school	1.06	[.98, 1.13]	1.07	[.99, 1.16]
Drug overdose rate	1.02	[.99, 1.05]	1.01	[.98, 1.04]
Percent aged 15–24	.86	[.70, 1.05]	.95	[.76, 1.18]
Linear time trend	.96	[.84, 1.09]	.96	[.84, 1.10]
Quadratic time trend	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.
*p = .05.

TABLE A9 Estimates for incident rate ratios for domestic-linked mass shooting (>3 victims), using fixed-effects poisson regression

Variable	Domestic-Linked Fatal Mass Shooting incidents (n = 182 shootings)		Fatalities in Domestic-Linked Mass Shootings (n = 842 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.64	[.26, 1.58]	.73	[.29, 1.83]
Shall issue w/ discretion	1.00	[.43, 2.32]	.85	[.37, 1.95]
Strict shall issue	.98	[.38, 2.49]	.93	[.34, 2.52]
Permitless	2.94	[.51, 16.83]	2.56	[.42, 15.60]
Purchaser licensing[a]	.95	[.40, 2.22]	1.90	[.72, 4.98]
Comprehensive background checks—point of sale	1.79	[.90, 3.58]	**1.92***	[1.05, 3.53]
DVRO prohibition—final orders, dating partner excluded	1.01	[.35, 2.89]	.87	[.29, 2.64]
DVRO prohibition ex parte included	1.59	[.88, 2.85]	1.51	[.81, 2.81]
DVRO includes dating partners	.90	[.57, 1.43]	.80	[.50, 1.28]
DVRO surrender required	.86	[.46, 1.61]	.84	[.45, 1.56]
Violent misdemeanor prohibition	1.60	[.44, 5.79]	1.66	[.55, 5.05]
Federal assault weapons/LCM ban (gradual)	.87	[.50, 1.50]	.89	[.51, 1.53]
State assault weapons ban (gradual)	.53	[.23, 1.20]	.68	[.32, 1.43]
Large-capacity magazine ban (gradual)	**.38***	[.21, .70]	**.27***	[.12, .59]
Gun ownership	.98	[.91, 1.05]	.97	[.91, 1.04]
Unemployment	1.04	[.91, 1.19]	1.09	[.94, 1.25]
Percent in poverty	1.00	[.88, 1.14]	.99	[.88, 1.12]
Percent male	.87	[.26, 2.89]	.75	[.21, 2.66]
Percent Black	1.02	[.82, 1.27]	1.06	[.85, 1.33]
Percent married	.96	[.83, 1.12]	.96	[.83, 1.11]
Percent divorced	.90	[.64, 1.27]	.95	[.68, 1.34]
Percent veteran	.99	[.82, 1.20]	1.03	[.85, 1.27]
Percent living in MSA	1.00	[.95, 1.06]	.99	[.94, 1.04]
Ethanol consumption per capita	1.10	[.16, 7.46]	1.07	[.13, 8.41]
Religious adherence	1.03	[.94, 1.12]	1.01	[.92, 1.11]
Percent completed high school	1.02	[.92, 1.14]	1.01	[.91, 1.13]
Drug overdose rate	.99	[.93, 1.05]	.98	[.92, 1.04]
Percent aged 15–24	1.07	[.79, 1.47]	1.17	[.83, 1.64]
Linear time trend	1.01	[.80, 1.27]	1.04	[.83, 1.30]
Quadratic time trend	1.00	[.99, 1.01]	1.00	[.99, 1.01]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.
*p = .05.

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TABLE A10 Estimates for incident rate ratios for non–domestic-linked mass shooting (>3 victims), using fixed-effects poisson regression

Variable	Non–Domestic-Linked Fatal Mass Shooting incidents (n = 182 shootings)		Fatalities in Non–Domestic-Linked Mass Shootings (n = 2,057 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.88	[.46, 1.70]	1.21	[.62, 2.36]
Shall issue w/ discretion	.76	[.34, 1.71]	.92	[.38, 2.22]
Strict shall issue	1.28	[.76, 2.18]	1.20	[.66, 2.15]
Permitless	.58	[.24, 1.42]	.75	[.19, 2.92]
Purchaser licensing[a]	**.42***	[.22, .80]	**.45***	[.25, .83]
Comprehensive background checks—point of sale	.87	[.50, 1.51]	1.84	[.49, 6.87]
DVRO prohibition—final orders, dating partner excluded	.91	[.35, 2.38]	.75	[.25, 2.27]
DVRO prohibition ex parte included	.83	[.46, 1.50]	.68	[.38, 1.22]
DVRO includes dating partners	.84	[.46, 1.53]	.85	[.45, 1.62]
DVRO surrender required	.76	[.39, 1.49]	.99	[.45, 2.20]
Violent misdemeanor prohibition	1.22	[.60, 2.50]	.69	[.28, 1.72]
Federal assault weapons/LCM ban (gradual)	.96	[.65, 1.41]	.95	[.62, 1.45]
State assault weapons ban (gradual)	.79	[.42, 1.48]	.94	[.50, 1.76]
Large-capacity magazine ban (gradual)	.56	[.26, 1.19]	**.35***	[.16, .76]
Gun ownership	1.01	[.97, 1.04]	.99	[.96, 1.03]
Unemployment	1.04	[.97, 1.11]	1.01	[.92, 1.11]
Percent in poverty	1.00	[.93, 1.07]	.98	[.92, 1.05]
Percent male	.52	[.19, 1.38]	**.40***	[.16, 1.00]
Percent Black	1.02	[.83, 1.25]	1.13	[.81, 1.58]
Percent married	1.08	[.95, 1.23]	1.03	[.90, 1.18]
Percent divorced	1.10	[.79, 1.53]	.99	[.67, 1.46]
Percent veteran	**.77***	[.64, .94]	.95	[.75, 1.18]
Percent living in MSA	1.01	[.98, 1.05]	1.01	[.97, 1.05]
Ethanol consumption per capita	1.32	[.30, 5.94]	1.00	[.21, 4.87]
Religious adherence	1.01	[.96, 1.08]	.99	[.92, 1.07]
Percent completed high school	1.05	[.94, 1.18]	1.09	[.97, 1.22]
Drug overdose rate	**1.04***	[1.01, 1.08]	1.01	[.98, 1.05]
Percent aged 15–24	.78	[.58, 1.04]	.85	[.61, 1.17]
Linear time trend	.94	[.81, 1.09]	.94	[.80, 1.10]
Quadratic time trend	1.00	[1.00, 1.00]	1.00	[1.00, 1.01]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*p = .05.

Estimates Omitting Major Mass Shooting Incidents From 2012 in Colorado (Aurora) and Connecticut (Newtown).

TABLE A11 Estimates for incident rate ratios for all fatal mass shootings (>3 victims), Omitting Newtown and Aurora shootings

Variable	All Fatal Mass Shooting Incidents (n = 602 shootings)		Fatalities in All Fatal Mass Shootings (n = 2, 937 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	.93	[.55, 1.57]	1.50	[.81, 2.75]
Shall issue w/ discretion	.89	[.50, 1.60]	1.10	[.54, 2.24]
Strict shall issue	1.30	[.73, 2.30]	1.52	[.76, 3.06]
Permitless	1.31	[.51, 3.34]	1.09	[.34, 3.50]
Purchaser licensing[a]	**.40***	[.23, .69]	**.33***	[.19, .59]
Comprehensive background checks—point of sale	1.11	[.78, 1.59]	1.41	[.73, 2.74]
DVRO prohibition—final orders, dating partner excluded	.89	[.43, 1.85]	.77	[.34, 1.77]
DVRO prohibition ex parte included	1.13	[.77, 1.64]	1.21	[.75, 1.94]
DVRO includes dating partners	.90	[.57, 1.45]	.93	[.51, 1.70]
DVRO surrender required	.76	[.49, 1.17]	.76	[.45, 1.30]
Violent misdemeanor prohibition	1.51	[.78, 2.91]	1.27	[.63, 2.59]
Federal assault weapons/LCM ban (gradual)	.92	[.68, 1.26]	.96	[.63, 1.44]
State assault weapons ban (gradual)	.67	[.33, 1.38]	.90	[.30, 2.74]
Large-capacity magazine ban (gradual)	.56	[.30, 1.03]	.40	[.14, 1.14]
Gun ownership	.98	[.95, 1.02]	.96	[.93, 1.00]
Unemployment	1.02	[.95, 1.10]	1.01	[.91, 1.11]
Percent in poverty	1.01	[.95, 1.07]	1.00	[.93, 1.07]
Percent male	.82	[.39, 1.75]	.90	[.39, 2.08]
Percent Black	1.07	[.91, 1.25]	1.17	[.96, 1.43]
Percent married	1.03	[.94, 1.13]	.99	[.89, 1.11]
Percent divorced	1.02	[.79, 1.31]	.96	[.72, 1.28]
Percent veteran	**.86***	[.75, .98]	.91	[.78, 1.07]
Percent living in MSA	1.01	[.98, 1.03]	1.01	[.98, 1.03]
Ethanol consumption per capita	1.08	[.39, 2.97]	.79	[.23, 2.66]
Religious adherence	1.01	[.97, 1.06]	.99	[.94, 1.05]
Percent completed high school	1.06	[.98, 1.14]	1.07	[.99, 1.17]
Drug overdose rate	1.01	[.97, 1.05]	.99	[.95, 1.03]
Percent aged 15–24	.83	[.68, 1.02]	.86	[.69, 1.08]
Linear time trend	.92	[.81, 1.05]	.89	[.77, 1.03]
Quadratic time trend	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.
*p = .05.

TABLE A12 Estimates for incident rate ratios for domestic-linked mass shooting (>3 victims), Omitting Newtown and Aurora shootings

	Domestic-Linked Fatal Mass Shooting Incidents (n = 181 shootings)		Fatalities in Domestic-Linked Mass Shootings (n = 815 fatalities)	
	Law Variables + Covariates		Law Variables + Covariates	
Variable	**IRR**	**95% CI**	**IRR**	**95% CI**
Concealed carry permit—may issue reference No issue	.67	[.26, 1.70]	.75	[.28, 2.02]
Shall issue w/ discretion	.99	[.42, 2.35]	.84	[.34, 2.04]
Strict shall issue	.97	[.36, 2.66]	.93	[.30, 2.86]
Permitless	2.49	[.37, 16.69]	1.72	[.19, 15.52]
Purchaser licensing[a]	.60	[.16, 2 .20]	.60	[.14, 2.53]
Comprehensive background checks—point of sale	1.90	[.91, 4.00]	**2.17***	[1.05, 4.48]
DVRO prohibition—final orders, dating partner excluded	.91	[.32, 2.60]	.71	[.23, 2.20]
DVRO prohibition ex parte included	1.60	[.89, 2.87]	1.66	[.87, 3.17]
DVRO includes dating partners	.92	[.58, 1.47]	.83	[.51, 1.36]
DVRO surrender required	.84	[.44, 1.62]	.78	[.38, 1.62]
Violent misdemeanor prohibition	1.76	[.42, 7.41]	1.81	[.51, 6.47]
Federal assault weapons/LCM ban (gradual)	.87	[.50, 1.52]	.85	[.46, 1.57]
State assault weapons ban (gradual)	.34	[.10, 1.14]	**.24***	[.06, .90]
Large-capacity magazine ban (gradual)	**.46***	[.23, .89]	**.45***	[.22, .91]
Gun ownership	.97	[.90, 1.05]	.97	[.90, 1.05]
Unemployment	1.05	[.90, 1.21]	1.08	[.91, 1.28]
Percent in poverty	1.01	[.88, 1.15]	1.00	[.87, 1.14]
Percent male	1.09	[.31, 3.90]	1.27	[.29, 5.52]
Percent Black	1.00	[.80, 1.25]	1.01	[.80, 1.27]
Percent married	.96	[.82, 1.13]	.97	[.81, 1.16]
Percent divorced	.86	[.59, 1.27]	.82	[.52, 1.27]
Percent veteran	1.00	[.83, 1.21]	1.06	[.87, 1.30]
Percent living in MSA	1.00	[.95, 1.06]	.99	[.94, 1.05]
Ethanol consumption per capita	.93	[.14, 6.29]	.83	[.11, 6.07]
Religious adherence	1.02	[.94, 1.11]	1.01	[.94, 1.10]
Percent completed high school	1.02	[.91, 1.15]	1.01	[.89, 1.13]
Drug overdose rate	.98	[.92, 1.04]	.98	[.91, 1.05]
Percent aged 15–24	1.00	[.75, 1.33]	.99	[.75, 1.30]
Linear time trend	.98	[.79, 1.23]	1.02	[.81, 1.28]
Quadratic time trend	1.00	[.99, 1.01]	1.00	[1.00, 1.01]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.
*p = .05.

TABLE A13 Estimates for incident rate ratios for non–domestic-linked mass shooting (>3 victims), Omitting Newtown and Aurora shootings

Variable	Non–Domestic-Linked Fatal Mass Shooting incidents (n = 181 shootings)		Fatalities in Non–Domestic-Linked Mass Shootings (n = 2,045 fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	1.00	[.49, 2.03]	1.72	[.79, 3.75]
Shall issue w/ discretion	.81	[.36, 1.82]	1.06	[.42, 2.68]
Strict shall issue	1.51	[.85, 2.69]	1.79	[.86, 3.72]
Permitless	.67	[.25, 1.78]	1.08	[.24, 4.76]
Purchaser licensing[a]	**.38***	[.20, .70]	**.34***	[.18, .62]
Comprehensive background checks—point of sale	.85	[.48, 1.51]	1.11	[.45, 2.74]
DVRO prohibition—final orders, dating partner excluded	.90	[.33, 2.52]	.75	[.25, 2.22]
DVRO prohibition ex parte included	1.04	[.54, 2.01]	1.20	[.60, 2.39]
DVRO includes dating partners	.90	[.45, 1.81]	.98	[.43, 2.26]
DVRO surrender required	.75	[.35, 1.61]	.84	[.35, 2.00]
Violent misdemeanor prohibition	1.33	[.65, 2.74]	.99	[.48, 2.06]
Federal assault weapons/LCM ban (gradual)	.98	[.65, 1.47]	1.09	[.66, 1.80]
State assault weapons ban (gradual)	.72	[.31, 1.69]	.94	[.24, 3.75]
Large-capacity magazine ban (gradual)	.67	[.27, 1.69]	.47	[.12, 1.94]
Gun ownership	1.00	[.96, 1.04]	.97	[.92, 1.02]
Unemployment	1.03	[.96, 1.11]	1.01	[.92, 1.11]
Percent in poverty	1.00	[.94, 1.07]	.98	[.91, 1.07]
Percent male	.68	[.27, 1.73]	.69	[.25, 1.93]
Percent Black	1.08	[.87, 1.33]	1.27	[.94, 1.72]
Percent married	1.06	[.92, 1.21]	.98	[.84, 1.14]
Percent divorced	1.10	[.77, 1.57]	.94	[.64, 1.37]
Percent veteran	**.79***	[.65, .96]	.88	[.69, 1.11]
Percent living in MSA	1.01	[.98, 1.05]	1.02	[.97, 1.06]
Ethanol consumption per capita	1.13	[.24, 5.21]	.86	[.13, 5.51]
Religious adherence	1.01	[.95, 1.08]	.99	[.91, 1.07]
Percent completed high school	1.06	[.95, 1.19]	1.11	[.97, 1.26]
Drug overdose rate	1.04	[1.00, 1.08]	1.01	[.96, 1.06]
Percent aged 15–24	.78	[.57, 1.07]	.80	[.54, 1.18]
Linear time trend	.91	[.77, 1.07]	.86	[.72, 1.04]
Quadratic time trend	1.00	[1.00, 1.00]	1.00	[1.00, 1.01]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*p = .05.

Estimates Using Different Definitions of "Mass Shooting"—Shootings With Fatalities > 4 and Shootings With Fatalities > 5.

TABLE A14 Estimates for incident rate ratios for all mass shooting (>4 victims)

Variable	All Fatal Mass Shooting Incidents (n = 198 shootings) IRR	95% CI	Fatalities in All Fatal Mass Shootings (n = 1, 352 fatalities) IRR	95% CI
Concealed carry permit—may issue reference No issue	**4.14***	[1.57, 1.87]	**8.41***	[3.00, 23.57]
Shall issue w/ discretion	.96	[.31, 2.94]	1.23	[.35, 4.30]
Strict shall issue	2.24	[.91, 5.49]	2.60	[.99, 6.78]
Permitless	.91	[.14, 5.78]	1.53	[.19, 12.43]
Purchaser licensing[a]	.52	[.15, 1.83]	.44	[.09, 2.18]
Comprehensive background checks—point of sale	1.94	[.85, 4.41]	3.65	[.74, 18.05]
DVRO prohibition—final orders, dating partner excluded	.70	[.22, 2.21]	.63	[.15, 2.61]
DVRO prohibition ex parte included	.97	[.54, 1.73]	1.11	[.55, 2.26]
DVRO includes dating partners	.58	[.30, 1.13]	.61	[.24, 1.52]
DVRO surrender required	.75	[.40, 1.42]	.79	[.32, 1.95]
Violent misdemeanor prohibition	2.10	[.55, 8.02]	1.34	[.35, 5.05]
Federal assault weapons/LCM ban (gradual)	1.00	[.50, 2.02]	.92	[.42, 2.01]
State assault weapons ban (gradual)	.58	[.13, 2.62]	1.41	[.09, 2.94]
Large-capacity magazine ban (gradual)	**.20***	[.06, .65]	**.08***	[.01, .92]
Gun ownership	.97	[.91, 1.02]	.94	[.88, 1.00]
Unemployment	1.08	[.97, 1.21]	1.08	[.95, 1.24]
Percent in poverty	.95	[.85, 1.06]	.93	[.81, 1.06]
Percent male	.43	[.12, 1.59]	.39	[.08, 1.94]
Percent Black	.92	[.66, 1.28]	1.05	[.68, 1.61]
Percent married	.90	[.80, 1.01]	.88	[.75, 1.04]
Percent divorced	.81	[.55, 1.19]	.83	[.53, 1.29]
Percent veteran	.88	[.69, 1.12]	.94	[.70, 1.26]
Percent living in MSA	.98	[.94, 1.02]	.97	[.92, 1.02]
Ethanol consumption per capita	.86	[.13, 5.73]	.90	[.09, 9.22]
Religious adherence	.93	[.86, 1.00]	**.90***	[.82, 1.00]
Percent completed high school	**1.17***	[1.05, 1.30]	**1.19***	[1.05, 1.34]
Drug overdose rate	1.02	[.96, 1.07]	.99	[.94, 1.04]
Percent aged 15–24	1.14	[.84, 1.55]	1.13	[.77, 1.65]
Linear time trend	.96	[.77, 1.20]	.93	[.73, 1.19]
Quadratic time trend	1.00	[.99, 1.00]	1.00	[1.00, 1.01]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.

*$p = .05$.

TABLE A15 Estimates for incident rate ratios for all mass shooting (>5 victims)

Variable	All Fatal Mass Shooting Incidents (>5 victims) ($n = 92$ shootings)		Fatalities in All Fatal Mass Shootings ($n = 822$ fatalities)	
	IRR	95% CI	IRR	95% CI
Concealed carry permit—may issue reference No issue	**1.77***	[1.99, 58.31]	**25.74***	[4.03, 164.2]
Shall issue w/ discretion	2.13	[.27, 16.58]	1.95	[.17, 21.93]
Strict shall issue	1.93	[.30, 12.41]	1.79	[.22, 14.29]
Permitless	3.81	[.34, 42.94]	2.99	[.22, 41.29]
Purchaser licensing[a]	.87	[.32, 2.33]	.69	[.24, 2.05]
Comprehensive background checks—point of sale	2.27	[.52, 9.84]	6.98	[.82, 59.36]
DVRO prohibition—final orders, dating partner excluded	.61	[.11, 3.35]	.36	[.05, 2.62]
DVRO prohibition ex parte included	1.16	[.48, 2.79]	1.07	[.41, 2.83]
DVRO includes dating partners	.98	[.27, 3.58]	.94	[.21, 4.24]
DVRO surrender required	.51	[.15, 1.76]	.88	[.19, 4.02]
Violent misdemeanor prohibition	.72	[.16, 3.26]	.27	[.04, 1.65]
Federal assault weapons/LCM ban (gradual)	.77	[.31, 1.96]	.69	[.21, 2.22]
State assault weapons ban (gradual)	1.04	[.17, 6.36]	1.38	[.12, 15.48]
Large-capacity magazine ban (gradual)	**.14***	[.03, .70]	**.05***	[.00, .51]
Gun ownership	.96	[.89, 1.04]	.92	[.84, 1.01]
Unemployment	1.16	[.98, 1.37]	1.17	[.95, 1.45]
Percent in poverty	.93	[.80, 1.10]	.88	[.72, 1.07]
Percent male	.26	[.03, 2.14]	.42	[.04, 4.62]
Percent Black	.82	[.52, 1.30]	.91	[.53, 1.57]
Percent married	1.05	[.86, 1.28]	1.03	[.79, 1.33]
Percent divorced	1.03	[.56, 1.91]	1.06	[.54, 2.08]
Percent veteran	.86	[.64, 1.18]	.92	[.63, 1.34]
Percent living in MSA	.96	[.88, 1.05]	.94	[.84, 1.04]
Ethanol consumption per capita	5.43	[.23, 126.96]	1.79	[.04, 77.79]
Religious adherence	.91	[.80, 1.03]	.88	[.75, 1.03]
Percent completed high school	1.16	[.97, 1.39]	1.19	[.97, 1.47]
Drug overdose rate	.98	[.89, 1.08]	.95	[.86, 1.05]
Percent aged 15–24	1.16	[.66, 2.04]	1.20	[.59, 2.45]
Linear time trend	1.10	[.83, 1.44]	.99	[.74, 1.33]
Quadratic time trend	1.00	[.99, 1.01]	1.00	[.99, 1.01]

[a]Handgun purchaser licensing with in-person application and/or fingerprinting of applicant.
*$p = .05$.

EXHIBIT 46

GALLUP®

NOVEMBER 13, 2020

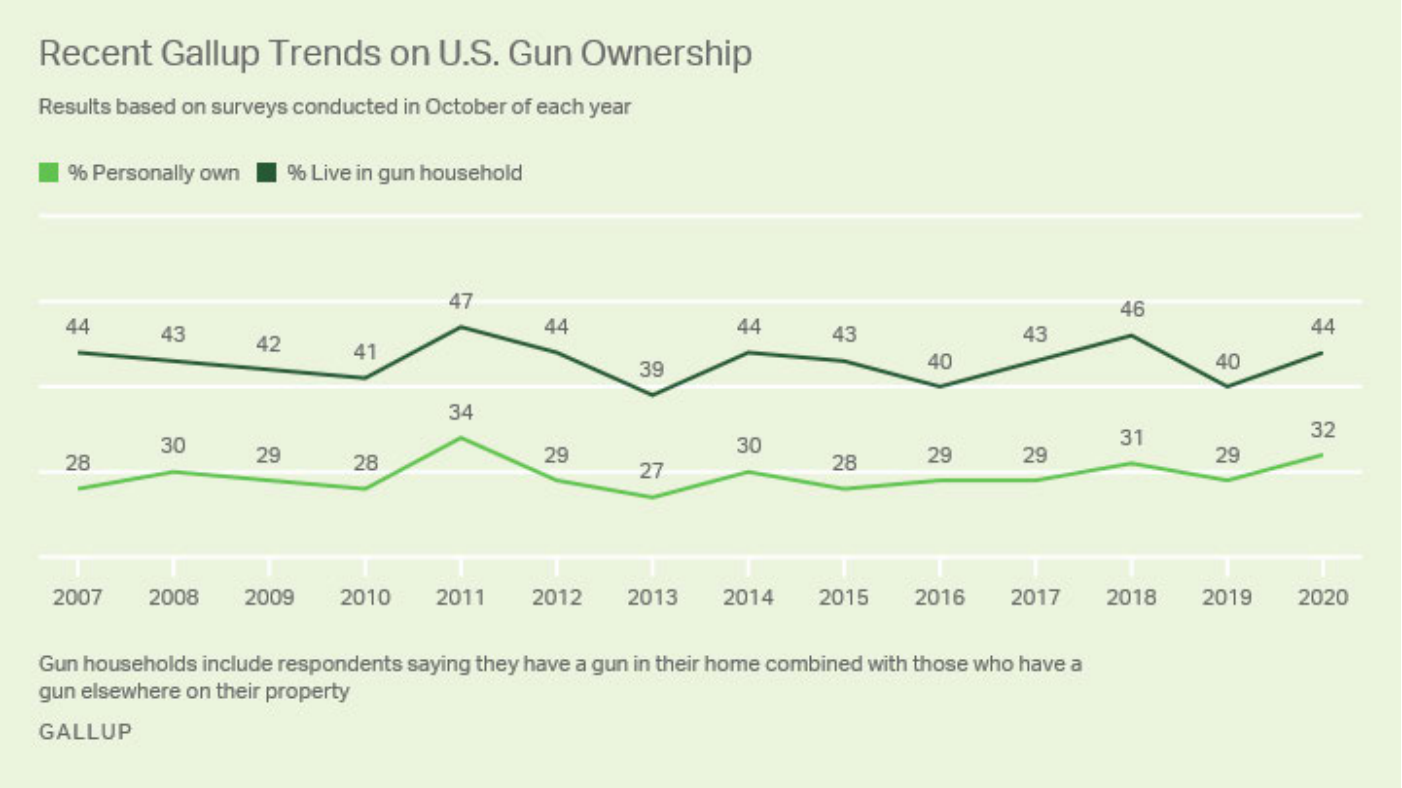
What Percentage of Americans Own Guns?

BY **LYDIA SAAD**

Editor's Note: This article was updated Nov. 13, 2020, with Gallup's latest data on Americans' gun ownership.

WASHINGTON, D.C. -- Thirty-two percent of U.S. adults say they personally own a gun, while a larger percentage, 44%, report living in a gun household. Adults living in gun households include those with a gun in their home or anywhere on their property.

Gallup has tracked both metrics of gun ownership annually since 2007, showing no clear increase or decrease in gun ownership over that time.



See Gallup's Guns "Topics A to Z" page for the full trend on gun ownership since 1959.

The latest results are from Gallup's annual Crime poll, conducted Sept. 30-Oct. 15, 2020. As is typical, the rate of personal gun ownership varies most by political party and ideology, gender, race/ethnicity, region and urbanicity, with smaller differences seen by household income and marital status.

- Republicans (50%), rural residents (48%), men (45%), self-identified conservatives (45%) and Southerners (40%) are the most likely subgroups to say they personally own a gun.
- Liberals (15%), Democrats (18%), non-White Americans (18%), women (19%) and Eastern residents (21%) are the least likely to report personal gun ownership.

Gun Ownership in the U.S., 2020

	Personally own a gun	Live in gun household	Number of interviews
	%	%	
U.S. adults	32	44	1,035
Gender			
Men	45	51	530
Women	19	35	505
Age			
18-29	22	38	129
30-49	35	45	244
50-64	32	45	291
65+	36	48	357
Education			
Postgraduate	26	36	225
College graduate only	35	50	250
Some college	34	48	329
No college	31	41	219
Household income			
$100,000+	38	55	296
$40,000 to <$100,000	34	51	371
<$40,000	25	31	270
Race/Ethnicity			
White (non-Hispanic)	38	51	768
Non-White	18	28	246
Region			
East	21	28	212
Midwest	34	50	214
South	40	53	368
West	26	38	241
Type of community			
Big/Small city	23	32	364
Suburb of big/small city	25	41	293
Town/Rural area	48	61	344
Marital status			
Married	38	52	541
Not married	25	36	465

Questions: Do you have a gun in your home? (Asked of those who do not have a gun in their home:) Do you have a gun anywhere else on your property such as in your garage, barn, shed or in your car or truck? (Asked of those who have a gun in their home or on their property:) Do you personally own a gun, or do the gun or guns in your household belong to another household member?

GALLUP, SEPT. 30-OCT. 15, 2020

	Personally own a gun	Live in gun household	Number of interviews
	%	%	
Children			
Have child under 18	36	48	229
No child under 18	30	42	781
Party ID			
Republican	50	64	325
Independent	29	39	370
Democrat	18	31	314
Ideology			
Conservative	45	57	377
Moderate	29	41	364
Liberal	15	30	267

Questions: Do you have a gun in your home? (Asked of those who do not have a gun in their home:) Do you have a gun anywhere else on your property such as in your garage, barn, shed or in your car or truck? (Asked of those who have a gun in their home or on their property:) Do you personally own a gun, or do the gun or guns in your household belong to another household member?

GALLUP, SEPT. 30-OCT. 15, 2020

Gallup measures Americans' gun ownership each October as part of its Crime poll -- one of 12 surveys that make up the Gallup Poll Social Series.

Gallup's full trend on U.S. gun ownership is available on the Guns "Topics A to Z" page.

Explore Gallup articles about guns and gun control on the Guns "Gallup Topics" page.

SURVEY METHODS

RELEASE DATE: November 13, 2020

SOURCE: Gallup https://news.gallup.com/poll/264932/percentage-americans-own-guns.aspx

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EXHIBIT 47

SPECIAL REPORT

U.S. NEWS

America's rifle: Why so many people love the AR-15

The Instagram tag #ar15 has over 1.7 million posts, with updates by the minute

Megan Hill, 26, with an AR-15 at the Nephi City Shooting Range in Nephi, Utah, in December 2017. Kim Raff for NBC News

SAVE

Dec. 27, 2017, 1:19 PM EST / Updated Feb. 15, 2018, 8:08 AM EST

By Jon Schuppe

UPPER MARLBORO, Md. – There are a lot of reasons people love their AR-15 semiautomatic rifles, and it doesn't much matter to them what the haters say.

For some, the gun is a tool, a finely tuned machine that can cut down an animal or intruder, or pierce a distant target, with a single precise shot.

For others, it is a toy, a sleek beast of black plastic and metal that delivers a gratifying blast of adrenaline.

And for many, it is a symbol, the embodiment of core American values – freedom, might, self-reliance.

“There are very few things that serve such a great form and function, and look cool,” said Daniel Chandler, 26, an AR-15 owner here in suburban Maryland. When he takes his AR out of its case at a shooting range, he smiles like he just unwrapped a gift. “There are few things you’ll find that are wonderfully appealing to look at, wonderful exercises in mechanical engineering, and that could save your life.”

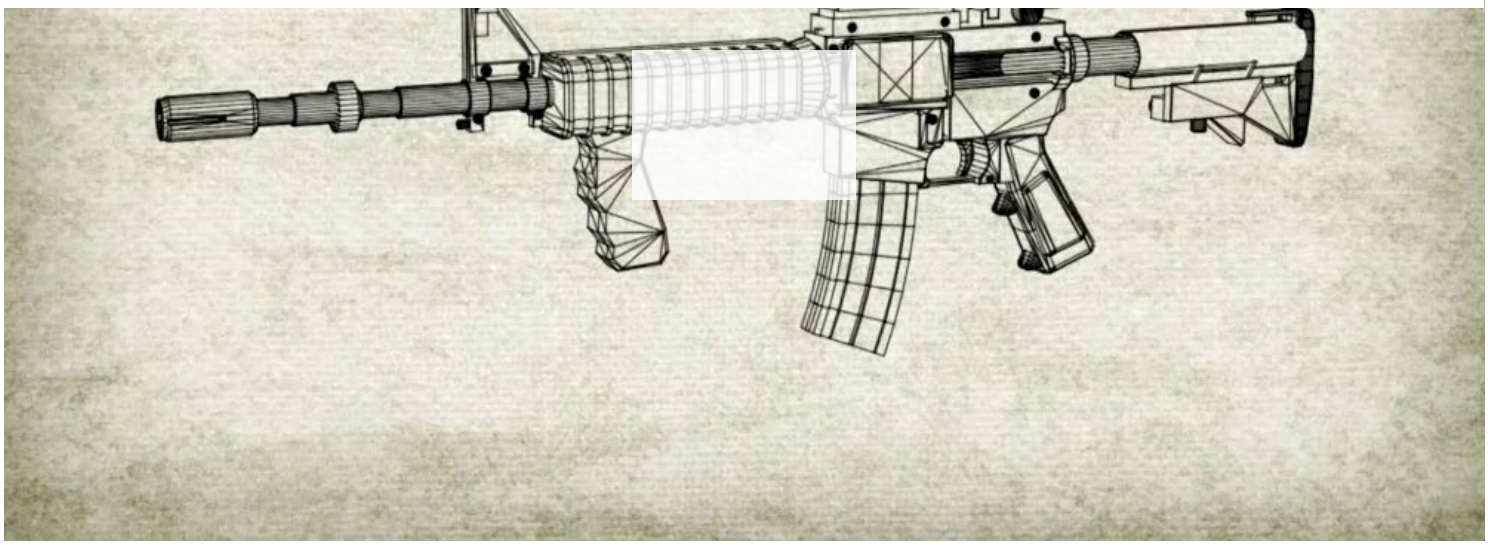
This is the side of the AR-15 that many don’t see, or ever consider.

Because an AR-15, or a variant, was reportedly used in several mass shootings – including Aurora, Colorado; Newtown, Connecticut; San Bernardino,California; Sutherland Springs, Texas; Las Vegas and Parkland, Florida, in which a total of 154 people were killed – this civilian sibling of a military assault rifle is an exceptionally polarizing product of modern American industry. The AR-15 and its semiautomatic cousins – they shoot one round for each pull of the trigger — incite repulsion among those who see them as excessive, grotesque and having no place on the civilian market.

It is the focus of multiple attempts at prohibition, which in turn has prompted people to run out and buy more. Such “panic buying” drove sales

of AR-15s to record levels during the presidency of Barack Obama and the 2016 presidential campaign. Gun merchants say some buyers are also driven by a fascination with a weapon used in notoriously heinous crimes.

Once banned, these assault rifles are hugely popular in the U.S.



Fears of a ban have subsided under gun-friendly President Donald Trump, and so have sales; gun makers are in the midst of a year-long slump that has driven down prices for AR-style rifles. Those discounts appear to have driven a record number of Black Friday gun background checks.

Devotees say the AR-15 has been wrongly demonized, arguing that the vast majority of owners never use it in a crime, and that despite the rifle's use in mass shootings, it is responsible for a very small proportion of the country's gun violence.

Thanks to that ardent following, and shrewd marketing, the AR-15 remains a jewel of the gun industry, the country's most popular rifle, irreversibly lodged into American culture.

From Vietnam to the mainstream

The AR-15 was developed in the late 1950s as a civilian weapon by Eugene Stoner, a former Marine working for small California startup called ArmaLite (which is where the AR comes from). The gun, revolutionary for its light weight, easy care and adaptability with additional components, entered the mainstream in the mid-1960s, after Colt bought the patent and developed an automatic-fire version for troops in Vietnam, called the M16.

The civilian model wasn't mass produced until the 1980s, after the original patent expired and a variety of companies began making them. That transformed a specific brand to a more generic offering on which a mini-industry would flourish.

When the AR-15 and other semiautomatic rifles began to turn up in shootings, a movement began to restrict their manufacture and sale. Much of the outrage stemmed from the militaristic appearance of those guns, and their ability to fire rapidly.

But there was also a more visceral reason, involving flesh and blood. AR-15s inflict much more damage to human tissue than the typical handgun, which is used in most shootings. That's largely because of the speed at which projectiles leave the weapons; they are much faster out of the muzzle of an AR-15, or similar rifle, and deliver a more devastating blow to bones and organs. Those projectiles are also more likely to break apart as they pass through the body, inflicting more damage.

"The higher muzzle-velocity projectiles, if they strike an organ, you're more likely to have severe injury and bleeding and dying than with lower muzzle-velocity munitions," said Donald Jenkins, a trauma surgeon at the University of Texas Health Science Center at San Antonio and the owner of several guns, including an AR-15.

The backlash peaked in 1994, when President Bill Clinton signed a ban on the sale of many types of semiautomatic rifles deemed "assault weapons," including versions of the AR-15. Manufacturers continued making versions of the AR-15 that complied with the new law, which was allowed to expire in 2004. That set the stage for an explosion in AR-15 sales.

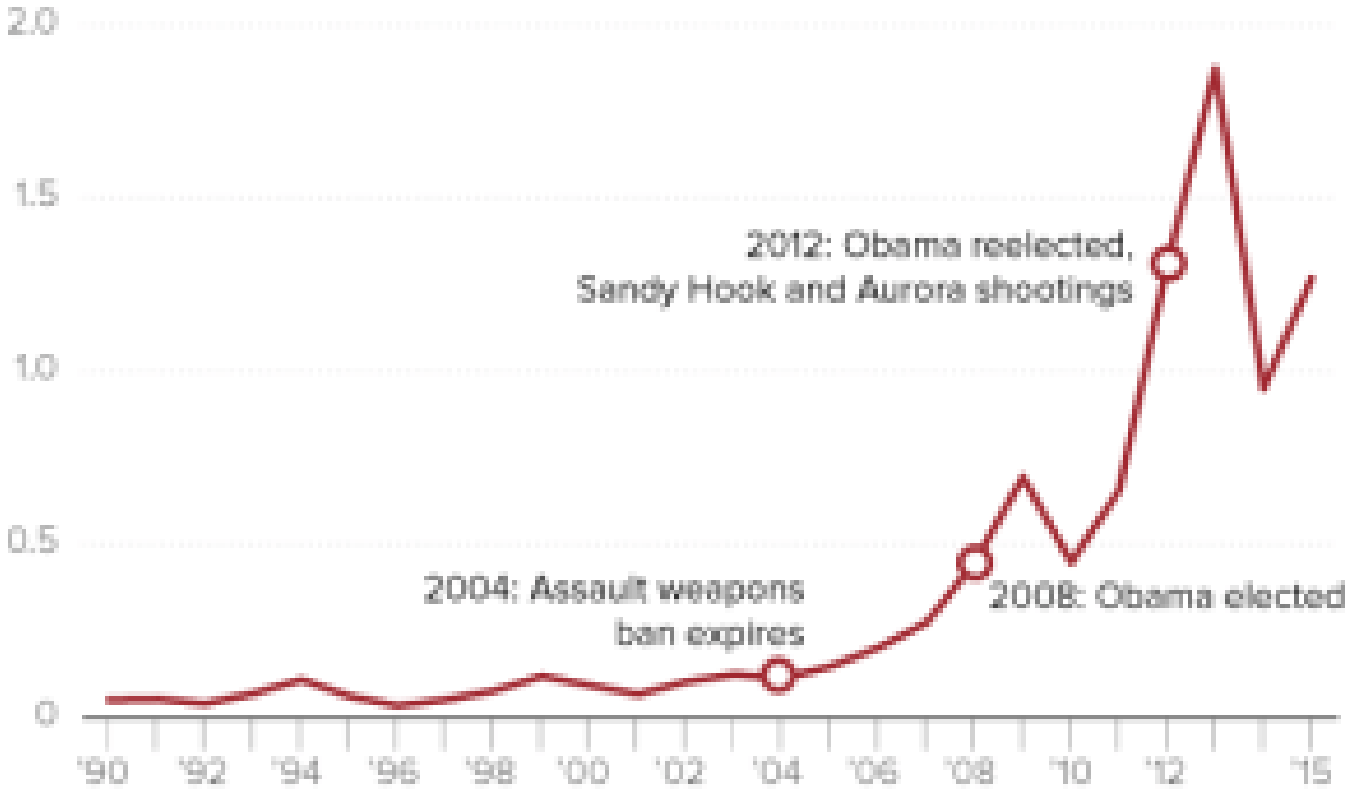
By then, military-style weapons were becoming a more common sight in America, due largely to the response to the 9/11 attacks. Anti-terror police forces began patrolling cities and transportation hubs, and the wars in Afghanistan and Iraq were covered intimately. That higher visibility seemingly fed a desire among gun owners to get what the troops and cops were using.

With encouragement from the gun industry, the AR-15 grew popular not only among people who enjoyed owning the latest tactical gear, but also among recreational and competitive target shooters, and hunters. Many saw it as a pinnacle of firearms engineering – ergonomic, accurate, reliable.

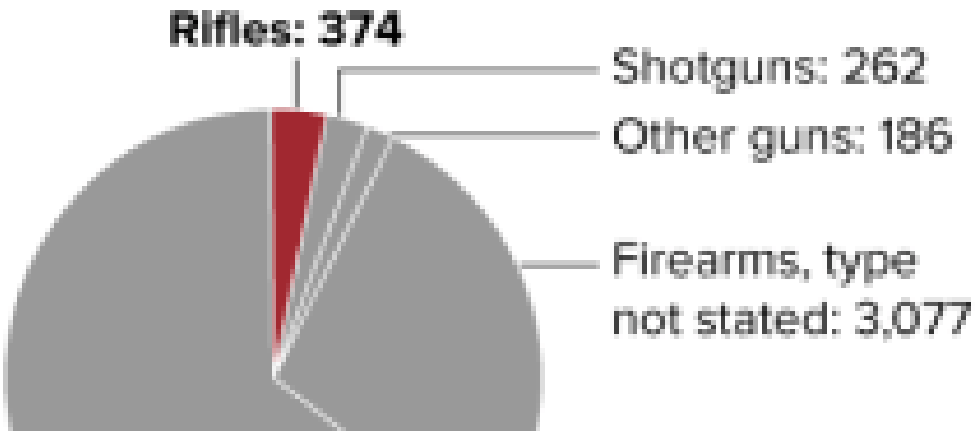
America's rifle

Despite its use in many mass shootings, the popular AR-15 rifle accounts for relatively few murders.

Estimated number of AR-style rifles produced, in millions



Murder victims by firearms, 2016



"It's kind of the standard, de-facto rifle now," said Evan Daire, 23, a gun-range worker in New Jersey who aspires to become a professional target shooter. "No matter what role you're looking at, it pretty much fills that role."

Production of AR-style guns has soared since the federal ban expired. In 2004, 107,000 were made. In 2015, the number was 1.2 million, according to the National Shooting Sports Foundation (NSSF), an industry trade association. The organization does not provide sales data, nor does it have 2016 production estimates, but says that year's activity likely broke all records.

Today, one of out of every five firearms purchased in this country is an AR-style rifle, according to a NSSF estimate. Americans now own an estimated 15 million AR-15s, gun groups say. New AR-15 style guns range widely in price, from about $500 to more than $2,000.

'Destined to be a best-seller'

Chandler is an unlikely AR enthusiast. He grew up outside Baltimore, a city plagued by gun violence, raised by parents opposed to firearms and was friends with kids whose lives had been torn apart by them. For much of his youth he considered himself anti-gun.

Then a well-to-do neighbor was shot in a home invasion. Chandler realized that his family had no weapon to defend itself, and decided to buy a gun when he got old enough.

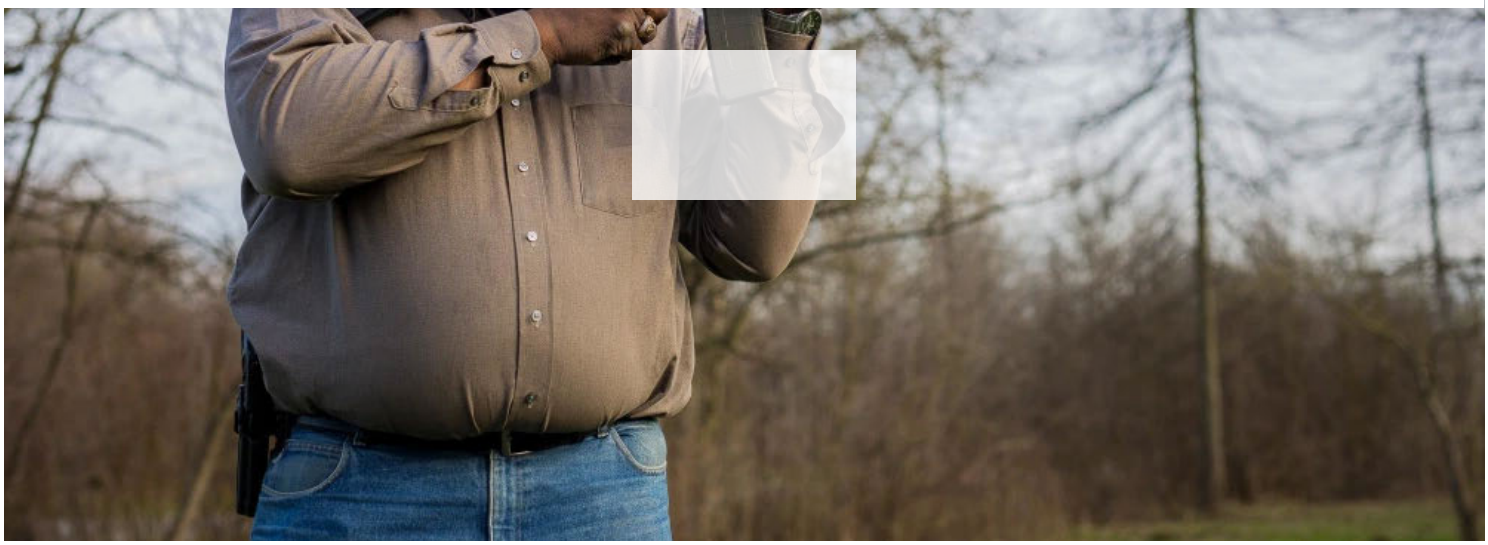
Daniel Chandler, 26, has been collecting guns for four years. He has some AR-15s in his collection. Andre Chung / for NBC News

When he turned 21 and began shopping, Maryland tightened laws in response to the December 2012 mass shooting at Sandy Hook Elementary School in Newtown, Connecticut. That measure banned many types of semiautomatic rifles, so when Chandler eventually decided that he wanted an AR-15, he built one from scratch, adhering to the new restrictions. It's black and green, with a 16-inch barrel, a collapsible stock and an electronic red-dot sight.

On one of his recent visits to a gun range, Chandler showed what made the AR-15 a cutting-edge gun when it was created, and one reason why it became so widespread. Pushing the gun's "takedown pins" with his fingers, he broke his gun down into its basic components, and within several seconds snapped it back together.

This is why some people compare the AR-15 to a car chassis, others to Legos or Mr. Potato Head. It is relatively easy to take it apart, reassemble it and modify it — including changes to the caliber of ammunition it fires. Those who build ARs from scratch link themselves to a centuries-old American gunsmithing tradition.

In the Age of Trump, black church preaches Gospel of God and guns



"It was destined to be a best-seller because of these qualities," said Dave Kopel, a gun-rights advocate and research director at the Independence Institute, a libertarian think tank in Denver.

Recommended

GUNS IN AMERICA

Sixth person arrested in connection with shooting at Sweet 16 party in Alabama

U.S. NEWS

Woman charged with hate crime in stabbing of Indiana University student

Building an AR-15 at home often begins with buying a "lower receiver," the only part with a serial number and that requires a federal background check. The rest of the core parts are available online. Then there is a seemingly endless array of accessories: barrels, grips, stocks, rails, magazines and scopes.

Related: Oklahoma Man Uses AR-15 to Kill Three Teen Home Intruders

Chandler loves the AR he built. He admires its simple, efficient mechanics, its precision, and how much fun it brings. He fires almost weekly for target practice, along with a Glock 17 handgun. He's taken his wife to the range with him, and she's become an AR fan herself, preparing to build her own.

Chandler, who is black, doesn't have many friends who enjoy guns as much as he does. So he has created a firearm-focused Instagram page to find similarly minded people, many of them millennial first-generation gun owners like himself.

"The AR-15 makes sense, and I think that's why more people my age are gravitating to it," Chandler said.

The hashtag #ar15 has over 1.8 million tags on Instagram, with users uploading by the minute.

Growth and backlash

This new generation of gun owners, who show off their accessorized rifles on social media – and often seek sponsorship deals with manufacturers – are a reflection of how conventional the AR-15 has become.

Gun makers have goosed sales by emphasizing the AR-15s connection to the military and the fight to defend one's freedoms, an argument that grew more effective during movements to ban them.

But gun-control advocates say the industry has exploited people's fears and desires, promoting a gun originally designed to kill people. They argue that AR-15s and similar guns cause more damage, and death, when used in mass shootings.

"I'm not going to question whether people say they prefer the gun to hunt with, but there's certainly been a push by the industry to make assault weapons viewed in people's minds as an acceptable hunting rifle," said Josh

Sugarmann, executive director of the Violence Policy Center, which works to reduce gun violence. "If you look back 10 years ago, that's not the way they were looked at."

The families of people killed in Newtown cited industry marketing techniques in a pending lawsuit against Remington, the maker of the killer's AR-style rifle. Gun groups say the company can't be held responsible, arguing that "millions of peaceful, law abiding Americans" regularly shoot ARs at the range with no ill effect.

AR-15 owners say the rifle gets unfairly targeted by the actions of individual criminals, and that a ban wouldn't do much to affect gun violence.

"If someone wants to do damage they're going to find a way," said Heidi Rapach, a mother of two from New Jersey whose husband, a police officer, taught her to shoot an AR-15 — and bought her one for Mother's Day. "That doesn't mean guns themselves are the enemy. It's the person. It doesn't mean all the people that own guns and use them properly have to suffer for that."

Related: Fate of Sandy Hook lawsuit against gun maker could be decided by a slingshot

Since the time of the federal ban, attempts to restrict gun sales have met with mixed success, with tighter restrictions on people accused of domestic violence but wider acceptance of concealed carry.

Crime rates in America have declined drastically during that period. Even so, AR-15s and similar guns are still used in mass shootings, drawing new rounds of condemnation – and calls for new bans – with each attack.

Some states have enacted their own bans, a list that grew after the 2012 Newtown shooting. States with restrictions on AR-style guns include

California, Connecticut, New Jersey, Massachusetts, New York and Maryland – where the 2013 law was upheld by a federal court ruling that asserted AR-15s were not protected by the Second Amendment. None of these states have outlawed the AR-15 altogether, however.

Related: Assault Weapons Not Protected by Second Amendment, Federal Appeals Court Rules

Gun industry surveys assert that the typical AR-15 owner is a married man over 35, with a large proportion having served in the military or law enforcement. But this appears to be changing. New buyers tend to be younger and more diverse than the general gun-buying public, according to a 2017 report published by Southwick Associates, a market research firm, and the National Shooting Sports Foundation. That also includes women.

'It's a comfort'

Megan Hill's relationship with guns goes back as far as she can remember; her parents and grandfather kept firearms in their Southern California homes, and an early boyfriend took her hunting and target shooting. But it wasn't until she married, moved to Utah and was preparing to have children that she decided to get her own.

Megan Hill, 26, target shoots this month with an AR-15 at the Nephi City Shooting Range in Nephi, Utah. Kim Raff / for NBC News

She and her husband researched which gun would meet their needs: something safe, reliable and versatile.

“We looked at the AR-15, and it was all in one package,” Hill, 26, recalled. “You can target-shoot with it, protect yourself with it, hunt with it. Luckily we haven’t had to use it in self-defense, but it’s a comfort knowing that it’s there to protect my children and my family.”

Her husband ordered parts and built one himself. They’ve since acquired a few more.

This year, after the birth of her second child, Hill decided to start working on becoming a competitive shooter, documenting her journey on Instagram.

"It gave me a sense of myself again: I'm going to make this goal, I'm going to accomplish something," Hill said.

For Hill, life with an AR-15 can best be described in one word: freedom. She means both personal freedom and a symbolic freedom that connects her to the gun's use by the U.S. military.

"What makes us a strong nation is our freedom, and the AR-15 represents that freedom," Hill said.

'That tactical itch'

The gun industry has another more marketable name for the AR-15: the modern sporting rifle. The label signifies its crossover appeal. The gun is now a key component in shooting sport events and has replaced the bolt-action rifle as the gun of choice for many hunters.

Joey Ploshay is one of them.

Born into a hunting family in the San Francisco Bay Area, Ploshay has two ARs designed for killing game. One has a long barrel for use on varmints: coyotes, bobcats and foxes. The other has a shorter barrel that he takes out on long excursions into the brush, where he hunts for wild pigs. He can change calibers according to the size of the game he's pursuing. He hosts Facebook and Instagram pages dedicated to hunting in a state with tight firearm regulations.

Tracing the gun: the archaic way the U.S. tracks gun ownership

Ploshay, 25, a pipe fitter, said he relies on the ARs because of their precision, which allows him to deliver a single, deadly shot that minimizes the animal's suffering.

"Once I started using it, I fell in love with how easy and accurate and light-recoiling it was," he said.

Rod Pinkston, on the other hand, uses the AR because it can fire follow-up shots quickly. A retired soldier, he runs a Georgia company that develops methods to control the invasive feral pig population in the South. He and his staff, including former Army sharpshooters, depend on their ARs to take out several pigs in a single encounter.

Pinkston sometimes brings paying guests on night expeditions, outfitting them with AR-15s accessorized with top-of-the-line gear, not too different

from what he used in the service. Using such a gun gives ordinary people a chance to “scratch that tactical itch,” he said.

That Walter Mitty-esque experience, he believes, plays a crucial role in the AR’s enduring allure.

“There’s something about how guys are made that makes it appeal to them very much,” Pinkston said. “I think it has something to do with wanting to be a soldier or law enforcement. There’s something there, dream-wise.”

Rod Pinkston, owner of a Georgia hog-control company, and one of his AR-10 rifles, a model that is similar to the AR-15 but allows for heavier ammunition.

Branden Camp / for NBC News

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Supply Restrictions at the Margins of Heller and the Abortion Analogue: Stenberg Principles, Assault Weapons, and the Attitudinalist Critique

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Supply Restrictions at the Margins of *Heller* and the Abortion Analogue: *Stenberg* Principles, Assault Weapons, and the Attitudinalist Critique

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INTRODUCTION

With close to 300 million guns in the civilian inventory,[1] and confirmation of the right to keep and bear arms in *District of Columbia v. Heller*,[2] the United States is well past the point where firearms supply restrictions can be effective.[3] Nonetheless, proposals for supply restrictions at the margins of the individual right continue.[4] Recent proposals for renewal of the 1994 Assault Weapons Ban, and the corresponding market response, suggest that people on both sides of the issue think *Heller* might not protect assault weapons.[5]

Heller established that citizens have a constitutional right to possess guns that are in common use for ordinary purposes like self-defense.[6] Like any first effort, *Heller* leaves many issues unsettled. The common-use test might generate either empirical filters or categories of functionality that could protect guns labeled assault weapons. However, *Heller* does not promise that everything nominally protected is always

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1. *See* Nicholas J. Johnson, *Imagining Gun Control in America: Understanding the Remainder Problem*, 43 WAKE FOREST L. REV. 837, 843 n.21 (2008) (citing GRADUATE INST. OF INT'L STUDIES, SMALL ARMS SURVEY 2007: GUNS AND THE CITY 47 tbl.2.3 (2007) [hereinafter SMALL ARMS SURVEY]).

2. 128 S. Ct. 2783, 2791–92 (2008).

3. *See* Johnson, *supra* note 1, at 838–39.

4. *See id.*

5. Indications that the Obama administration favors renewal of the 1994 ban, 18 U.S.C. § 922 (2006), have fueled a buying panic that has pushed assault weapon sales to record levels. Alex Roth & Betsy McKay, *Fear and Greed Have Sales of Guns and Ammo Shooting Up*, WALL ST. J., Apr. 16, 2009, at A1, *available at* http://online.wsj.com/article/SB123984046627223159.html; *The "Obama Effect" Brings a Run on Guns and Ammo*, TIME, Apr. 27, 2009, at 27.

6. 128 S. Ct. at 2817–18.

protected.[7] There are many different types of guns, each with distinct utilities to the user and correspondingly distinct externalities that the government might want to control. As the majority acknowledged and dissenters criticized, *Heller* provides no obvious standard for determining whether some guns and some circumstances get more protection than others.[8] The assault weapons question prompts the search for an appropriate standard. What should happen when a state asserts that assault weapons must be banned because they impose peculiar externalities and that the ban is constitutional because many other guns remain available?

We are not working on a blank slate. It is a common problem that protected rights are exercised in a variety of ways, employing different methodologies and technologies that raise distinct constitutional questions. We might employ something like the broad protection granted to alternative methodologies under the First Amendment.[9] It is not just traditional printing presses, but an endless variety of communications methodologies that are protected.[10] On that principle, all guns satisfying the *Heller* common-use test might enjoy equally robust protection.[11] The obvious objection is that guns are different. The gun right poses risks of a different character and magnitude. We need something that acknowledges that both the right, and the restriction of it, put human life in play. On that count, the Court's abortion jurisprudence is uniquely-suited for building foundation on which to build a standard for resolving the assault weapons question.

Over a decade ago I argued that there is a broad analytical intersection between abortion and gun-rights claims.[12] The threshold analogy is apt because both situations pit the right-claimant against substantial competing life-interests. I illustrated the intersection primarily through the work of abortion rights commentators who repeatedly use self-defense themes to construct the abortion right.[13] That broad intersection remains. And within it, on the particular question of

7. *See id.* at 2817.

8. *Id.* at 2816–17; *id.* at 2846 (Breyer, J., dissenting).

9. *See, e.g.*, Schad v. Borough of Mount Ephraim, 452 U.S. 61, 65 (1981).

10. *See id.* ("[M]otion pictures, programs broadcast by radio and television, and live entertainment, such as musical and dramatic works fall within the First Amendment guarantee.").

11. *See Heller*, 128 S. Ct. at 2817. Some will criticize this distinction as more practical and political than constitutional. Ideally, we might all agree that constitutional rights must be equally protected, and rhetorically the Court has affirmed this idea. *See, e.g.*, Valley Forge Christian Coll. v. Ams. United for Separation of Church & State, Inc., 454 U.S. 464, 484 (1982) ("[W]e know of no principled basis on which to create a hierarchy of constitutional values . . . .").

12. Nicholas J. Johnson, *Principles and Passions; The Intersection of Abortion and Gun Rights*, 50 RUTGERS L. REV. 97, 98–99 (1997). Core arguments from that article are summarized in the text of this Article. *See infra* notes 196–221 and accompanying text.

13. Johnson, *supra* note 12, at 99.

"partial-birth abortion," there is a compelling analogue to the assault weapons question.

In *Stenberg v. Carhart*, the Supreme Court engaged an abortion claim that closely tracks the assault weapons question.[14] *Stenberg* dealt with a challenge to Nebraska's partial-birth abortion ban.[15] The question was whether a woman could demand access to a particular abortion methodology known alternately as dilation and extraction ("D&X") or intact dilation and evacuation ("intact D&E").[16] The majority decision, advanced by the liberal wing of the Court, affirmed a woman's right to the abortion *methodology best suited to protect life and health*, even when lesser but still safe alternatives are available.[17] This, in principle, is the assault weapons question. Particularly, can the state ban guns that in some circumstances are the best self-defense options, on the excuse that other guns remain available?

The Court addressed the partial-birth abortion question again in *Gonzales v. Carhart*, upholding a federal ban on the same procedure protected in *Stenberg*.[18] *Gonzales* was in many ways the conservative's repudiation of *Stenberg*. It distinguished but did not overturn *Stenberg*, which remains an important model for our purposes.[19] The statute in *Gonzales* rested on explicit congressional findings that partial-birth abortion "*is never medically necessary*."[20] *Stenberg*, in contrast, was grounded on findings that the contested methodology *sometimes was the best available procedure for preserving the life* or health of the mother.[21] This "best available methodology" claim is where the partial-birth abortion/assault weapons comparison is most apt.

Of equal importance, *Stenberg*, more so than *Gonzales*, frames the attitudinalist critique[22] that is the subtext of this Article.

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14. 530 U.S. 914, 920–23 (2000).

15. *Id.* at 921–22.

16. *See id.* at 929–30. The Nebraska statute contrasted the illegal D&X procedure with the legal D&E procedure. *Id.* at 923–29. Subsequently, in *Gonzales v. Carhart*, 127 S. Ct. 1610, 1621 (2007), the term "intact D&E" was used synonymously with D&X.

17. *Stenberg*, 530 U.S. at 937–38.

18. *Gonzales*, 127 S. Ct. at 1619.

19. *See id.*

20. *Id.* at 1638 (emphasis added). While the Court did not entirely defer to those findings, its standards for evaluating those findings make *Gonzales* a more complicated comparison than *Stenberg*. *See id.* at 1638–39.

21. *Stenberg*, 530 U.S. at 937–38.

22. *See, e.g.*, Theodore W. Ruger et al., *The Supreme Court Forecasting Project: Legal and Political Science Approaches to Predicting Supreme Court Decisionmaking*, 104 COLUM. L. REV. 1150, 1152–55 (2004). Michael Dorf summarizes and brings a degree of skepticism to the attitudinalist model:

> Political scientists who study the Supreme Court do not take legal doctrine very seriously. According to the leading view of the political scientists—the "attitudinal model"—the attitudes of individual Justices are a better predictor of how the Court will resolve contested cases than is the sort of reasoning one finds in briefs and opinions. . . .

"Attitudinalism," widely endorsed by political scientists, argues that legal scholars erroneously focus on what justices *say* to explain and predict the Court's decisions.[23] Attitudinalists argue that this law talk is "worse than useless."[24] They say it is not the words and principles articulated in published opinions that dictate outcomes, but rather the *passions*[25] that drive Justices' preferences for particular outcomes that control results.[26] Just knowing whether a judge is liberal or conservative, and her general policy preferences and biases, say attitudinalists, better explains and predicts her votes than anything written in the United States Reports.[27]

Stenberg presents a better test of the attitudinalist critique than *Gonzales*. It pits Court liberals' constitutional protection of better methodologies to protect life or health in the abortion case against their nascent disparagement of the parallel gun claim through the series of dissents in *Heller*—views that prefigure a rejection of arguments that assault weapons are sometimes the better self-defense tools.[28] While *Gonzales* juxtaposed with *Heller* presents for the conservative wing similar tests of principle, those turn out to be quantitatively lighter burdens. As I show throughout this Article, conservatives could, on a principled basis, apply *Stenberg* standards to uphold a claim to better methodologies in the assault weapons case even after rejecting some of those same principles in *Gonzales*. So while both wings of the Court are exposed to the attitudinalist critique, Court conservatives can more easily justify their position on points of principle.

. . . .

> . . . [T]he political scientist employs Occam's razor to dispense with the metaphysical nonsense of law as a category independent of values, ideology and preferences, at least in the sorts of hard cases that reach the Supreme Court. Most spectacularly, she can point to the results of a recent experiment—the "Supreme Court Forecasting Project"—in which a cousin of the attitudinal model was matched against a battery of legal experts, each of whom was asked to predict the outcomes of then-pending cases in their respective fields of expertise: The statistical model correctly predicted the outcome in seventy-five percent of the cases, while the human team was right in only fifty-nine percent. Thus, armed with her statistics and regression analyses, the political scientist can dismiss most talk of "law" as worse than useless.

Michael C. Dorf, *Whose Ox is Being Gored? When Attitudinalism Meets Federalism*, 21 ST. JOHN'S J. LEGAL COMMENT. 497, 498–500 (2007) (footnotes omitted).

23. Ruger et al., *supra* note 22, at 1154.

24. Dorf, *supra* note 22, at 500.

25. I use "passions" here roughly in the sense that James Madison employed to describe the political interests and connections that generate factions: "By a faction, I understand a number of citizens, whether amounting to a majority or minority of the whole, who are united and actuated by some common impulse of *passion*, or of interest, adverse to the rights of other citizens." THE FEDERALIST No. 10, at 130 (James Madison) (E. H. Scott ed., 1898) (emphasis added).

26. Dorf, *supra* note 22, at 499–500. This criticism was at the core of my first elaboration of the "standard position" more than a decade ago. *See* Johnson, *supra* note 12, at 99–100.

27. *See* Dorf, *supra* note 22, at 512–13.

28. *See* District of Columbia v. Heller, 128 S. Ct. 2783, 2863–64 (2008) (Breyer, J., dissenting).

This Article will show how assault weapons might be protected under *Heller* as a threshold matter, how *Stenberg*'s guarantee of better methodologies to protect life or health applies just as easily to the assault weapons question, and how the response of Court liberals to an assault weapons case will be an important test of the attitudinalist critique. Part I will show how the assault weapons question emerged, and position it in the context of gun-control politics. Part II will show how assault weapons fit within the category of firearms protected under *Heller*'s common-use test, and how assault weapons, like all firearms, exhibit special marginal utilities (SMUs) that make them especially effective in certain categories of self-defense. Part III will show that the principles rendered in *Stenberg* apply just as easily, and sometimes more so, to assault weapons, putting the liberal wing of the Court to a test of principle that is much tougher to overcome than the roughly parallel burden that *Gonzales* poses for Court conservatives.

I. ASSAULT WEAPONS AND MODERN POLITICS

The first fight is about definitions. Some people still believe the assault weapons debate is about machine guns.[29] This is not surprising given that proponents of the 1994 ban were counting on precisely that confusion.[30] The calculation was political. Josh Sugarman of the Violence Policy Center argued in 1989 that the public had lost interest in handgun control.[31] He counseled the anti-gun lobby to switch to the "assault weapon issue,"[32] which they did in 1989 to great success.[33] In Sugarman's words:

> Although handguns claim more than 20,000 lives a year, the issue of handgun restriction consistently remains a non-issue with the vast majority of legislators, the press, and public. . . . Assault weapons . . . are a *new* topic. The weapons' menacing looks, coupled with the public's confusion over fully automatic machine guns versus semi-automatic assault weapons—anything that looks like a machine gun is assumed to be a machine gun—can only increase the chance of public support for restrictions on these weapons.[34]

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29. For example, every year in my Gun Control seminar, I conduct a survey on the first day of class. I have always gotten at least one response reflecting the belief that assault weapons are machine guns.

30. VIOLENCE POLICY CTR., ASSAULT WEAPONS AND ACCESSORIES IN AMERICA (1988), *available at* www.vpc.org/studies/awacont.htm (follow "Conclusion" hyperlink).

31. *Id.*

32. *Id.*

33. *See* Bruce H. Kobayashi & Joseph E. Olson, *In Re* 101 California Street: *A Legal and Economic Analysis of Strict Liability for the Manufacture and Sale of "Assault Weapons,"* STAN. L. & POL'Y REV., Winter 1997, at 41, 43.

34. VIOLENCE POLICY CTR., *supra* note 30.

One of the most salient descriptions of this maneuver is actually quoted by Justice Thomas in his *Stenberg* dissent.[35] Commenting on the legislative use of technically inaccurate pejoratives to label regulated activity (e.g., "partial-birth abortion"), Justice Thomas quotes an analysis of the assault weapons legislation:

> Prior to 1989, the term "assault weapon" did not exist in the lexicon of firearms. It is a political term, developed by anti-gun publicists to expand the category of "assault rifles" so as to allow an attack on as many additional firearms as possible on the basis of undefined "evil" appearance.[36]

Steven Halbrook clarifies that after World War II, "assault *rifle*" (compare "assault *weapon*") became a standard military term to describe a specific type of machine gun:

> The official U.S. Department of Defense manual on Communist small arms states: "Assault rifles are short, compact, selective-fire weapons [i.e., machineguns] that fire a cartridge intermediate in power between submachine-gun and rifle cartridges. Assault rifles have mild recoil characteristics and, because of this, are capable of delivering effective full automatic fire at ranges up to 300 meters." The usage became so accepted that the U.S. Supreme Court referred to the American Armed Forces M-16 selective fire rifle as the "standard assault rifle."[37]

Despite its dubious origin, the assault weapon designation is now a fixture in the gun-control debate. So while there are disagreements about what, if anything, constitutes an assault weapon,[38] I will use the 1994 ban classifications to talk about them here. Under that legislation, assault weapons are principally semiautomatic[39] rifles, with features like pistol grips, folding stocks, and bayonet lugs, that feed ammunition through a detachable box magazine (DBM).[40]

From a crime-control perspective, the regulation of assault weapons is mainly symbolic.[41] I have demonstrated previously that supply

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35. Stenberg v. Carhart, 530 U.S. 914, 1001 n.16 (2000) (Thomas, J., dissenting).

36. *Id.* (quoting Kobayashi & Olson, *supra* note 33, at 43).

37. STEVEN P. HALBROOK, FIREARMS LAW DESKBOOK: FEDERAL AND STATE CRIMINAL PRACTICE 671 (2008–2009 ed.) (alteration in original) (footnote omitted) (quoting HAROLD E. JOHNSON, U.S. ARMY FOREIGN SCI. & TECH. CTR., SMALL ARMS IDENTIFICATION AND OPERATIONS GUIDE—EURASIAN COMMUNIST COUNTRIES 105 (1980)).

38. *See, e.g.*, David B. Kopel, *Rational Basis Analysis of "Assault Weapon" Prohibition*, 20 J. CONTEMP. L. 381, 386–87 (1994).

39. This means they fire one shot with each pull of the trigger. *See* Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/semiautomatic (last visited June 10, 2009) ("[A]ble to fire repeatedly but requiring release and another pressure of the trigger for each successive shot.").

40. David Kopel provides a detailed description, along with photographs, of the types of guns defined as assault weapons under the 1994 ban. *See* David B. Kopel, *"Assault Weapons," in* GUNS: WHO SHOULD HAVE THEM? 159, 159–74, 192–203 (David B. Kopel ed., 1995).

41. *See* Jacob Sullum, *Ban Aid: The Real Point of the "Assault Weapon" Law*, REASON ONLINE, May 9, 2003, http://www.reason.com/news/show/35711.html ("In 1996 *Washington Post* columnist

restrictions ranging from one-gun-a-month schemes to flat gun bans cannot work without a willingness and ability to reduce supply to levels approaching zero[42]—an impossible feat in a country with 300 million guns tightly held by people who think they are uniquely important tools.[43] Internationally, the defiance ratio in places that have attempted confiscation and registration is 2.6 illegal guns for every legal one.[44] That is just the average.[45] In many countries defiance is far higher.[46] And none of those countries has as deep and entrenched a gun culture as the United States.[47] This remainder problem and defiance impulse mean that we are far past the point where supply restrictions can work.

Moreover, post-*Heller*, taking the supply to zero is explicitly constitutionally prohibited. This means that prospective supply restrictions on the roughly 1.5% increase in the civilian inventory that occurs each year[48]—some fraction of which are assault weapons—are worse than ineffective because they fuel delusions that something important has happened on the violence policy front. They are worse still where they amount to pandering by people who understand the problem well enough to know that restrictions just on certain guns will consume our energy, but will not reduce gun crime.[49] That said, campaigning for assault weapons bans persists.[50]

Charles Krauthammer, who favors banning gun possession by civilians, conceded that the arguments advanced by supporters of the 'assault weapon' ban were 'laughable.' The 'only real justification' for the law, he said, 'is not to reduce crime but to desensitize the public to the regulation of weapons in preparation for their ultimate confiscation.'").

42. Johnson, *supra* note 1, at 842. It is undeniable that a sealed room with no guns in it will have no gun crime. That simple idea, extrapolated to society at large, is the impulse for the view that supply restrictions are the answer to gun crime in America. *Id.* at 844.

43. *See id.* at 839.

44. *Id.* at 853 (citing SMALL ARMS SURVEY, *supra* note 1, at 55).

45. *Id.*

46. *See id.* at 853–56.

47. *Id.* at 855–56.

48. *Id.* at 848 n.44 (citing COMM. TO IMPROVE RESEARCH INFO. & DATA ON FIREARMS, NAT'L RESEARCH COUNCIL, FIREARMS AND VIOLENCE: A CRITICAL REVIEW 73 (Charles F. Wellford et al. eds., 2004)).

49. *See, e.g.*, Sullum, *supra* note 41. Furthermore, guns used in crime are, by a wide margin, handguns. *See* BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, HOMICIDE TRENDS IN THE UNITED STATES, *available at* http://www.ojp.usdoj.gov/bjs/homicide/tables/weaponstab.htm; *see also* District of Columbia v. Heller, 128 S. Ct. 2783, 2856–57 (2008) (Breyer, J., dissenting) (citing statistics suggesting that handguns "appear to be a very popular weapon among criminals"). Handguns are explicitly constitutionally protected under *Heller*. *See id.* at 2821–22 (majority opinion).

50. The push for renewal of the 1994 ban by the Obama administration has been resisted by the Senate and House leadership. *See* J. Taylor Rushing, *Reid Joins Pelosi in Opposing Ban Revival*, THEHILL.COM, Feb. 26, 2009, http://thehill.com/leading-the-news/reid-joins-pelosi-in-opposing-weapons-ban-revival-2009-02-26.html.

II. *HELLER*'S COMMONLY-OWNED FIREARMS AND THE SPECTRUM OF SELF-DEFENSE UTILITIES

A. *HELLER*'S COMMON FIREARMS FOR PRIVATE SELF-DEFENSE

Although *Heller* has been criticized for failing to resolve all of the questions that swirl around the newly clarified Second Amendment,[51] it does offer a formula for establishing the rough boundaries of protected firearms.[52] Noting that the Court's previous effort in *United States v. Miller*[53] focused less on who is protected and more on what weapons are protected by the Second Amendment, the *Heller* Court highlights the problematic results of *Miller*'s suggestion that "only those weapons useful in warfare are protected."[54] The *Heller* majority writes: "We think that *Miller*'s 'ordinary military equipment' language must be read in tandem with what comes after: '[O]rdinarily when called for [militia] service [able-bodied] men were expected to appear bearing arms supplied by themselves and of the kind in common use at the time[]'. . . for lawful purposes like self-defense."[55] With this elaboration, the Court defines the boundaries of constitutionally protected arms.

As a threshold matter, in contrast to the ambiguous implications of *Miller*, *Heller*'s common-use formula provides a relatively narrow range of protection that easily excludes the vast majority of military arms.[56] Excluded by definition are possibilities that, pre-*Heller*, were snidely advanced to undercut the individual-rights view—for example, does the Second Amendment mean you can have tactical nuclear weapons and stinger missiles?[57] By definition, any device that would destroy both the self-defender and the attacker in situations that satisfy the imminent threat requirement are outside the envelope. So no, you do not have a Second Amendment right to a nuke, a howitzer, or a stinger, because within the boundaries of private self-defense, they would blow you up too. This does leave room for dispute about fully-automatic infantry rifles. But as a practical matter that question is essentially settled. The Court already has said that machine guns might be excluded.[58] They are

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51. Much of this criticism is captured by Justice Breyer's dissent. *See Heller*, 128 S. Ct. at 2869–70 (Breyer, J., dissenting).

52. *Id.* at 2816–17 (majority opinion).

53. 307 U.S. 174 (1939).

54. *Heller*, 128 S. Ct. at 2815.

55. *Id.* at 2815 (first, second, and third alterations in original) (quoting United States v. Miller, 307 U.S. 174, 179 (1939)).

56. *See id.* at 2817 (referencing the "historical tradition of prohibiting the carrying of 'dangerous and unusual weapons'").

57. *See, e.g.*, Michael C. Dorf, *Federal Court of Appeals Says the Second Amendment Places Limits on Gun Control Legislation*, FINDLAW.COM, Oct. 31, 2001, http://writ.news.findlaw.com/dorf/20011031.html.

58. *Heller*, 128 S. Ct. at 2817.

numerically uncommon,[59] have been regulated as an exceptional category for decades,[60] and introduction of new ones is barred by law.[61]

So if machine guns can be restricted, what about assault weapons? *Heller* suggests criteria for answering at least part of that question. First, *Heller*'s explicit validation of firearms for self-defense[62] shows that the visceral reaction some people have to guns that seem built for fighting rather than sport[63] is no longer a sufficient gauge of legitimacy. Second, *Heller*'s common self-defense criteria suggests at least two obvious ways to qualify: A gun might be common because it is widely owned—for example, a Remington shotgun with sales in the millions.[64] A gun might also be common because it is functionally the same as other common guns—for example, a custom-made shotgun that operates just like the widely-owned Remington.

1. *Are Assault Weapons Numerically Common?*

Fundamentally, assault weapons are semiautomatic firearms, distinctions among which border on incoherent.[65] As a type,

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59. In 1995 there were over 240,000 automatic weapons registered with the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). MARIANNE W. ZAWITZ, U.S. DEP'T OF JUSTICE, GUNS USED IN CRIME 4 (1995), *available at* http://www.ojp.usdoj.gov/bjs/pub/pdf/guic.pdf. About half are owned by civilians and the other half by police departments and other governmental agencies. GARY KLECK, TARGETING GUNS: FIREARMS AND THEIR CONTROL 108 (1997).

60. *See, e.g.*, Firearms Owners' Protection Act of 1986, Pub. L. No. 99-308, 100 Stat. 449 (codified as amended in scattered sections of 18 and 26 U.S.C.).

61. 18 U.S.C. § 922(o) (2006).

62. *Heller*, 128 S. Ct. at 2822.

63. A 1994 open letter critical of the Second Amendment published in several national periodicals is a perfect example. *See* Albert W. Alschular et al., *Does the 2nd Amendment Mean We Must Tolerate This?*, AM. LAWYER, June 1994, at 96. The graphic backdrop of the letter is an INTRATEC "TEC-9." The TEC-9 is an ugly, menacing-looking gun. The letter suggests that by appearance alone, without any critique of relative functionality, thoughtful people should all agree that the TEC-9 is illegitimate. *See id.* But ironically, from a functional viewpoint, it is an absurdly sub-optimal gun. Though it is a handgun, it sacrifices the concealability that is the main SMU of the handgun. Though it is a semiautomatic, it fires not even the intermediate rifle round, but a pistol round that has less range and less inherent accuracy. GunsLot.com, Intratec TEC-9, http://www.gunslot.com/guns/intratec-tec-9 (last visited June 10, 2009). It is generally unreliable, with feeding problems being the main difficulty. *Id.* Because it is extremely heavy for a handgun, it is difficult to fire accurately and difficult even to hold in firing position. *Id.* Demonstration of it compared to most other guns leaves observers wondering what rationale produced the distinction that labels the shotgun legitimate but stigmatizes the TEC-9. *See id.*

64. Layne Simpson, *Remington's Magnificent Five*, SHOOTING TIMES, May 2000, *available at* http://hunting.about.com/od/guns/l/aastremmag5a.htm; Gary Engberg, *America's Shotgun*, BUCKMASTERS.COM, http://www.buckmasters.com/bm/Resources/Articles/tabid/135/articleType/ArticleView/articleId/1151/Americas-Shotgun.aspx (last visited June 10, 2009).

65. The California Attorney General's chief firearms expert reflected this in his argument for either banning all semiautomatics or banning none of them. *See* Kopel, *supra* note 38, at 403; *see also* Nicholas J. Johnson, *Shots Across No Man's Land: A Response to Handgun Control, Inc.'s Richard Aborn*, 22 FORDHAM URB. L.J. 441, 445 (1995) (explaining that criminals can switch from banned guns to acceptable guns that still accept thirty-round-plus magazines and actually have deadlier higher-velocity rifle cartridges but simply lack pistol grips and bayonet lugs—aesthetic features targeted by

semiautomatics are quite common.[66] The technology is at least a century old in both handguns and long guns (including rifles and shotguns).[67] For example, the Browning Auto-5 semiautomatic shotgun was introduced in 1902.[68] The Colt 1911 .45-caliber semiautomatic pistol was adopted as the U.S. military sidearm in 1911.[69] The Remington Model 8 semiautomatic rifle was patented in 1900.[70] Even today, with its magazine protruding below the breech, the Model 8 is roughly an assault weapon type.[71] These guns and millions of other semiautomatic rifles, pistols, and shotguns, have circulated in the civilian inventory for generations.[72]

Estimating the total number of semiautomatics in the private inventory is difficult. Many were sold before even nominal record-keeping was required under federal law.[73] Many others were sold by the U.S. government under the now-century-old Civilian Marksmanship

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weapons bans).

66. *See infra* text accompanying note 78 (noting that 60% of gun owners have some sort of semiautomatic gun).

67. *See infra* notes 68–72 and accompanying text. Many early semiautomatic firearms are now classified by the (ATF) as curios and relics. Special rules allow these guns to be sold and shipped directly between licensed collectors. *See* 18 U.S.C. §§ 921–931 (2006); 27 C.F.R. § 478.118 (2008) (regulations issued under 18 U.S.C. §§ 921–931).

68. Browning.com, Auto-5 Semi-Automatic Shotgun, http://www.browning.com/customerservice/dategun/detail.asp?id=13 (last visited June 10, 2009).

69. THE GUN DIGEST: 1944 FIRST ANNUAL EDITION 60 (Charles Richmond Jacobs et al. eds., 1944) [hereinafter GUN DIGEST FIRST ED.] ("The development of the automatic pistol between 1895 and 1911, and its adoption as the standard sidearm of most governments, have determined the general type of most of the pistol cartridges in present use.").

70. Guns & Ammo, G&A Guide, Remington Model 8, http://www.gunsandammomag.com/cs/Satellite/IMO_GA/Guide_C/Remington+Model+8 (last visited June 10, 2009). Remington bought the patent from designer John Browning, and marketed the gun beginning in 1906. Remington.com, Firearm Model History, Remington Model 8, http://www.remington.com/library/history/firearm_models/centerfire/model_8.asp (last visited June 10, 2009). Semiautomatic rifles date to at least an 1885 design by Ferdinand Ritter von Mannlicher. *See* Austro-Hungarian Army, Ferdinand Ritter von Mannlicher, http://www.austro-hungarian-army.co.uk/biog/mannlicher.htm (last visited June 10, 2009) ("His first semi-automatic rifle design appeared in 1885 . . . .").

71. *See supra* note 40 and accompanying text. Winchester produced the earliest automatic .22 put out in this country, the Model of 1903. Charles T. Haven, *Our Small Arms and Their Makers*, *in* GUN DIGEST FIRST ED., *supra* note 69, at 7. Heavier automatics (read: semiautomatics) for hunting purposes were brought out in 1905 and 1907 and since, in typical deer hunting cartridges. *Id.* Automatic and repeating shotguns were also brought out before the First World War. *Id.* The Winchester 1907, like the typical assault weapon, accommodates a detachable box magazine. *See* Phil Davis, *Winchester 1907 Self Loader: 100 Year Old "Evil Assault Rifle,"* GUNNEWS, June 2007, http://sangamoncorifleassociation.org/phildavis/winchester1907selfloader.html. It fires a 351 Winchester cartridge that at 180 grains is more than three times heavier than the typical 55 grain .223 round of the AR-15 from available fifteen-round magazines. *Id.*

72. NRA INST. FOR LEGISLATIVE ACTION, SEMI-AUTOMATIC FIREARMS AND THE "ASSAULT WEAPON" ISSUE (2005), http://www.nraila.org/Issues/factsheets/read.aspx?ID=238. The National Rifle Association's Institute for Legislative Action calculates the number of semiautomatics as fifteen percent of the total privately-owned firearms inventory. *Id.*

73. *See generally* David Hardy, *The Firearms Owners' Protection Act: A Historical and Legal Perspective*, 17 CUMB. L. REV. 585, 589–95 (1986) (describing federal regulatory and record-keeping requirements before the 1968 Gun Control Act).

Program.[74] Still, it is evident that semiautomatics are widely owned.[75] In the early debate over the 1994 ban, researchers from the Harvard School of Public Health surveyed whether people who owned semiautomatic firearms exhibited personal characteristics different from other gun owners.[76] This study reflected the subtext of the 1994 ban that something about the appearance of assault weapons attracted worrisome people, and the researchers pressed this point with the argument that owners of semiautomatic guns reported binge drinking more often than other gun owners.[77] For our purposes, the most significant finding was that *sixty percent of gun owners reported owning some type of semiautomatic firearm*.[78] This does not mean they all owned the archetypal AR-15.[79] However, it does suggest that a clear majority of gun owners have at least one gun that will fire as fast as they can pull the trigger. So it is just not credible to say that semiautomatic technology is unusual or uncommon.

There is still the question whether the appearance of particular guns somehow makes a difference. I have argued elsewhere that the focus on things like pistol grips, ignoring functionality, borders on the absurd.[80] Even ardent gun-control advocates have called the distinctions "laughable."[81] Groups like the Brady Campaign to Prevent Gun Violence make perfunctory attempts to sustain these distinctions,[82] and the

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74. *See* Nicholas J. Johnson, *Testing the States' Rights Second Amendment for Content: A Showdown Between Federal Environmental Closure of Firing Ranges and Protective State Legislation*, 38 IND. L. REV. 689, 715–16 (2005) (describing the Civilian Marksmanship Program "for selling surplus U.S. military arms and ammunition to civilians").

75. *See* David Hemenway & Elizabeth Richardson, *Characteristics of Automatic or Semiautomatic Firearm Ownership in the United States*, 87 AM. J. PUB. HEALTH 286, 287 (1997); NRA INST. FOR LEGISLATIVE ACTION, *supra* note 72.

76. *See, e.g.*, Hemenway & Richardson, *supra* note 75, at 286.

77. *Id.* at 287.

78. *Id.*

79. *See infra* note 143 and accompanying text; *see also* Michael Bane, *The World's Most Versatile Rifle*, OUTDOOR LIFE, Aug. 2007, at 58–59 ("[T]he AR has matured into one of the most versatile, accurate and easy-to-shoot platforms in the world.").

80. Johnson, *supra* note 65.

81. *See, e.g.*, Sullum, *supra* note 41.

82. *See* BRADY CAMPAIGN TO PREVENT GUN VIOLENCE, THE TOP 10 NRA MYTHS ABOUT ASSAULT WEAPONS, http://www.bradycampaign.org/issues/assaultweapons/nramyths/ (last visited June 10, 2009). The Brady Center's commentary on assault weapons makes the argument that

> the military features of semiautomatic assault weapons are designed to enhance their capacity to shoot multiple targets very rapidly. For example, assault weapons are typically equipped with large-capacity ammunition magazines that allow the shooter to fire 20, 50, or even more than 100 rounds without having to reload. Pistol grips on assault rifles and shotguns help stabilize the weapon during rapid fire and allow the shooter to spray-fire from the hip position. Barrel shrouds on assault pistols protect the shooter's hands from the heat generated by firing many rounds in rapid succession. . . . Far from being simply "cosmetic," these features all contribute to the unique function of any assault weapon to deliver extraordinary firepower. They are uniquely military features, with no sporting purpose whatsoever.
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> . . . .
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> . . . [These weapons] "are not generally recognized as particularly suitable for or readily

discussion below will address those efforts.[83] But for now, realize that semiautomatics with military features (e.g., pistol grips and bayonet lugs) have dominated firearms sales in recent years, with the AR-15 (the archetypal assault weapon) now the best-selling rifle type in the United States.[84] With Democrats in control of Congress and the White House, it is widely reported that overall sales of semiautomatic rifles have escalated to record levels.[85]

2. Are Assault Weapons Functionally Common?

Deciding whether a gun is functionally common requires some context. All guns have SMUs that make them better or worse options as self-defense scenarios shift.[86] The two basic categories of civilian firearms, long guns and handguns, exhibit respective SMUs of superior

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adaptable to sporting purposes" and instead "are attractive to certain criminals."

. . . .

The firepower of assault weapons makes them especially desired by violent criminals and especially lethal in their hands.

Id. (footnote omitted) (quoting DEP'T OF TREASURY, STUDY ON THE SPORTING SUITABILITY OF MODIFIED SEMIAUTOMATIC ASSAULT RIFLES 38 (1998)).

83. *See infra* Part II.A.2.

84. *See* Chuck Karwan, *America's Rifle: The AR-15 Has Weathered a 50 Year History of Controversy, Survived a Federal Ban and Fought in Everything from Steaming Jungles to Sandboxes. Now It's the Single Most Popular Centerfire Rifle in the U.S. Who Would've Guessed*, COMBAT TACTICS, GUNS & AMMO, Feb. 2009, at 24; Jeff Knox, *The Year of the AR and FUD*, SHOTGUN NEWS, Mar. 17, 2008, at 9 ("The AR-15 is the fastest selling firearm in the country and it appears that everyone in the industry is anxious to get in on the rush."). Citations to *Shotgun News* and similar publications may raise eyebrows. However, for industry news these are standard publications. Serious studies, like the congressionally-mandated evaluation of the impact of the 1994 ban, cite *Shotgun News* extensively on the point of sales and pricing. *See* JEFFREY A. ROTH ET AL., THE URBAN INST., IMPACT EVALUATION OF THE PUBLIC SAFETY AND RECREATIONAL FIREARMS USE PROTECTION ACT OF 1994 *passim* (1997).

85. *See, e.g.*, Judson Berger, *Obama Driving Surge in Gun Sales, Firearms Groups Say*, FOXNEWS.COM, Jan. 16, 2009, http://www.foxnews.com/politics/2009/01/16/firearms-associations-claim-obama-drove-surge-gun-sales/ ("End-of-the-year statistics show background checks for firearms purchases rose sharply in the last three months of 2008."); Nolan Findley, *Obama is Stimulating Gun Sales*, DETROIT NEWS, Feb. 8, 2009; Jacqui Seibel, *Obama Election Triggers Run on Gun Sales in State*, MILWAUKEE J. SENTINEL, Nov. 14, 2008, *available at* http://www.jsonline.com/news/wisconsin/34501994.html.

86. *See* Johnson, *supra* note 65, at 446–48.

ballistics[87] and concealability.[88] The handgun's concealability also produces the greatest externalities.[89] Most gun crime is handgun crime.[90]

Cutting the categories more finely, both long guns and handguns come in a range of ballistic variations (firing low, intermediate, or high-powered ammunition)[91] and a variety of repeating technologies. Fully automatic repeaters (true machine guns) are rare in civilian hands.[92] Semiautomatics, including assault weapons, use part of the energy from the fired cartridge to reset the firing mechanism.[93] Other sorts of repeating technologies use a combination of muscle and mechanical power.[94] Some of these technologies are exactly as fast as semiautomatic technology. For example, double-action revolver technology (in both handguns and some long guns) fires with each pull of the trigger like a semiautomatic.[95] Manual repeaters—for example, cowboy-style lever actions, pump actions, and bolt actions—will be slower than semiautomatics by fractions of seconds to multiple seconds, depending in part on the proficiency of the user.[96] Multi-barrel technology may be

87. For a detailed discussion of comparative ballistics, see *infra* notes 142–71 and accompanying text. Long guns, with their longer barrels, stronger chambers (accommodating larger cartridges and thus larger powder charges), and design facilitating large-muscle-group support of the gun, are generally more effective at distances where the handgun is nearly irrelevant. Carbine vs. Shotgun vs. Pistol for Home Defense, Monster Hunter Nation, http://larrycorreia.wordpress.com/2007/09/20/carbine-vs-shotgun-vs-pistol-for-home-defense/ (last visited June 10, 2009). The late Lieutenant Colonel Jeff Cooper, founder of Gunsite Training Center and vociferous advocate for major calibers in defensive handguns, famously said that for self-defense he would rather have a hatchet than a 9mm at intimate range. R.K. Campbell, The Army Pistol (Apr. 22, 2005), http://www.gunblast.com/RKCampbell_ArmyPistol.htm.

88. *See* Kopel, *supra* note 38, at 404.

89. *See id.* at 386.

90. *See supra* note 49.

91. Armchairgunshow.com, Winchester Lever Action Rifles, http://www.armchairgunshow.com/WinLever-info.html (last visited June 10, 2009); FirearmsPrimer.com, Rifle Cartridge Selection, http://www.firearmsprimer.com/rifles/rifles_2.htm (last visited June 10, 2009). There is no distinct number for either velocity or energy, but generally rifle cartridges that fire a 150 grain projectile close to 3000 feet per second would be considered high power. Also "High Power" is the title of a very popular type of rifle competition. But to provide examples, a .30-06 Springfield or a .300 Winchester Magnum would be considered high power. The 7.62 x 39 (the cartridge most often used in the SS and AK-47 variants) and the 5.56 x 45 (very similar, but not identical, to the .223 Remington and used in most AR-15 type rifles) would be considered intermediate cartridges. Publicola, Coming to Terms with Gun Control, http://publicola.mu.nu/archives/2004/11/28/coming_to_terms_with_gun_control.html (last visited June 10, 2009).

92. *See supra* note 59.

93. *See* Kopel, *supra* note 40, at 164 ("[T]he energy created by the explosion of gunpowder . . . is used to reload the next cartridge into the firing chamber.").

94. *See* GUN DIGEST 2009: THE WORLD'S GREATEST GUN BOOK (Ken Ramage ed., 63rd ed. 2008) (illustrating guns of all types including lever actions, bolt actions, pump actions, revolver actions and semiautomatics firearms).

95. *See* Kopel, *supra* note 40, at 164.

96. Steve Lee, Magnum Marlin: My .44 Caliber Friend, http://www.leverguns.com/articles/lee_marlin44.htm (last visited June 10, 2009). For aimed-fire at distance, the bolt action is generally superior in accuracy and ballistics. Chuck Hawks, The Bolt Action, http://www.chuckhawks.com/

faster than semiautomatic but typically with fewer shots available before reloading.[97] Finally, repeating multi-projectile technology (i.e., semiautomatic, pump, or lever-action shotguns) actually fires more projectiles faster than any of the rifles designated as assault weapons.[98]

Granting the assault weapons designation a rational construction, the objection must be to multishot capability.[99] The DBM ammunition feeding device is central to the designation.[100] For policymakers who seem to have devised ban lists by searching picture books for guns that looked scary,[101] it is understandable that the DBM, a visually distinct multishot feature, would stand out. But is it unusual enough to fail *Heller*'s common-use test?

Semiautomatic guns employing the DBM are a century old.[102] Many DBM guns avoid the assault weapons designation because they do not have pistol grips, adjustable stocks, or bayonet lugs.[103] I criticized early on that such distinctions are functionally incoherent.[104] For example, under the 1994 ban, the very same DBM gun was both legal and illegal depending on whether someone dropped it into a different stock.[105] There is no empirical evidence, and it is hard even to imagine plausible arguments, that features like pistol grips, bayonet lugs, and folding stocks produce different—let alone special or extraordinary—externalities.[106]

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bolt_action.htm (last visited June 10, 2009). In the military context, the scoped bolt action rifle of the sniper is, by on one measure, far more deadly than repeating rifles like the M-16: "According to figures released by the Department of Defense, the average number of rounds expended in Vietnam to kill one enemy solder [sic] with the M-16 was 50,000. The average number of rounds expended by U.S. military snipers to kill one enemy soldier was 1.3 rounds." Rod Powers, Army Sniper School: One Shot One Kill, http://usmilitary.about.com/od/armytrng/a/sniperschool.htm (last visited June 10, 2009).

97. Kopel, *supra* note 40, at 164–65.

98. *Id.* at 164–67. Some forms of rifle and pistol ammunition have attempted to copy this multi-projectile functionality. *Id.* Duplex loads in rifles and pistols (two projectiles in the same case) double the round count of each trigger pull. *Id.* The shotgun, in contrast, multiplies it many times depending on the size of shot used in the cartridge. *Id.* Semiautomatic shotguns also have been classified as assault weapons where they are fitted with pistol grips and folding stocks. *Id.*

99. *See* ROTH, *supra* note 84, at 1 ("Among other characteristics, ban proponents cited the capacity of these weapons, most of which had been originally designed for military use, to fire many bullets rapidly."). Supported by a grant from the National Institute of Justice, this study was mandated by the 1994 ban to assess its impacts. *Id.* at 8.

100. *See* Kopel, *supra* note 40, at 165 ("Most semi-automatic firearms (both banned and nonbanned) store their ammunition in detachable boxes called 'magazines.'").

101. *See, e.g.*, Kopel, *supra* note 38, at 403 (describing how state assault weapons categories seemed to be constructed by legislators flipping through catalogues to identify menacing-looking guns).

102. *See supra* note 71 (describing early Winchester semiautomatics).

103. *See* Kopel, *supra* note 38, at 171–73.

104. *See* Johnson, *supra* note 65, at 441–43.

105. HALBROOK, *supra* note 37, at 701 ("Ruger is subjected to its own quandary—the exempted Mini-14 is listed as 'w/o folding stock,' yet that rifle with a folding stock does not have a second feature which makes it otherwise prohibited under the generic definitions below.").

106. The 1997 assault weapons study mandated by the 1994 Act concludes, "[W]e were unable to detect any reduction to date in two types of gun murders that are thought to be closely associated with

The better explanation for these distinctions is symbolism. The objection was that assault weapon features were combat features; assault weapons were illegitimate because they were openly geared for gun fighting.[107] Before *Heller*, such distinctions could be explained by the formulation that the only legitimate guns were "sporting" guns. As a matter of policy, self-defense was submerged and even stigmatized.[108] Guns purely for defense against human aggressors, signaled in the minds of some by bayonet lugs and adjustable stocks, could be marginalized and outlawed.[109] With *Heller*'s explicit protection of handguns and other common self-defense guns,[110] the "sporting use" filter and corresponding distinctions based on appearance cannot be sustained.[111] So not only are these distinctions in appearance functionally irrelevant, post-*Heller* they are impermissible.

This still leaves the question whether semiautomatics, and particularly semiautomatics that use DBMs, are functionally distinct. The contention is these guns have exceptional multishot capabilities.[112] This is just wrong. Multishot utility does not distinguish the assault weapon. The assault weapon is surpassed in this category by a class of indisputably common guns that fire multiple projectiles per trigger pull and can be continuously reloaded without disabling the weapon. The category is the ubiquitous shotgun, in either semiautomatic or manual repeating mode.[113]

The assault weapon has been identified as a "spray-fire" weapon designed for shooting multiple projectiles without aiming.[114] This is

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assault weapons . . . ." ROTH, *supra* note 84, at 2. The focus on accoutrements might be understood as rooted in the "sporting use" importation standard under the Gun Control Act of 1968, which is an interesting story of public and private motivations. *See* Nicholas J. Johnson, *A Second Amendment Moment: The Constitutional Politics of Gun Control*, 71 Brook. L. Rev. 715, 771–73 (2005) (describing the trade protectionism of the New England gun manufacturers as an impulse for the sporting-use filter in the 1968 Gun Control Act).

107. *See, e.g.*, BRADY CAMPAIGN TO PREVENT GUN VIOLENCE, *supra* note 82 (claiming that guns with assault weapon features have only military application).

108. The Brady organization urged that the only legitimate use of firearms was "sporting purposes." *See* Press Release, Brady Campaign to Prevent Gun Violence, Tiger Woods' "Gun-Toting Spectator" Confirms Weapons Problems at Sports Venues (Feb. 2, 1999), *available at* http://www.bradycampaign.org/media/release.php?release=158.

109. *Supra* note 101.

110. District of Columbia v. Heller, 128 S. Ct. 2783, 2717–22 (2008).

111. Kopel argues that even pre-*Heller*, the assault weapons distinction could not pass a seriously administered rational-basis test. Kopel, *supra* note 38, at 417.

112. *See, e.g.*, CAL. PENAL CODE § 12275.5 (West 2008) ("The Legislature has restricted the assault weapons . . . based upon finding that each firearm has such a high rate of fire and capacity for firepower that its function as a legitimate sports or recreational firearm is substantially outweighed by the danger that it can be used to kill and injure human beings.").

113. Kopel, *supra* note 40, at 164–67.

114. *See, e.g.*, BRADY CAMPAIGN TO PREVENT GUN VIOLENCE, ASSAULT WEAPONS THREATEN OUR SAFETY AND SECURITY, http://www.bradycampaign.org/issues/assaultweapons/awoverview/ (last visited June 10, 2009) ("Pistol grips on assault rifles and shotguns help stabilize the weapon during rapid fire and allow the shooter to spray-fire from the hip position."); LEGAL COMMUNITY AGAINST VIOLENCE,

false.[115] The shotgun better fits that description. It is designed to hit moving or multiple targets with a cloud of projectiles, a stream of spherical "shot."[116] Depending on the loading, the number of projectiles will range from six large projectiles to hundreds of tiny spheres smaller than a BB.[117] Shotguns do not require traditional "aiming" and do not even have traditional sights (i.e., a rear sight through which one aligns with the front sight to ensure a straight line between shooter's eye and the target).[118] Most shotguns have a simple bead at the front.[119] Shotgunners will comment that they never noticed that the bead was missing, because shotguns fire to, and impact, a visual swath rather than a precise point of aim.[120] In contrast, a rifle without its sights is relatively nonfunctional. All common rifles of every configuration shoot a single projectile per cycle in a straight path.[121] No matter how quickly they cycle, hitting targets reliably requires aiming.[122]

Another distinction between assault weapons and the shotgun is that the shotgun ammunition supply can be "topped off." Most repeating shotguns store ammunition in a tube magazine directly below the barrel.[123] The next round is moved from the tube into the chamber either

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BANNING ASSAULT WEAPONS—A LEGAL PRIMER FOR STATE AND LOCAL ACTION 1 (reprint 2005), *available at* http://www.lcav.org/library/reports_analyses/Banning_Assault_Weapons_A_Legal_Primer_8.05_entire.pdf ("Key assault weapon features include . . . pistol grips . . . facilitating spray firing from the hip."); VIOLENCE POLICY CTR., BULLET HOSES: SEMIAUTOMATIC ASSAULT WEAPONS—WHAT ARE THEY? WHAT'S SO BAD ABOUT THEM? (2003), *available at* http://www.vpc.org/studies/hosecont.htm (follow "Ten Key Points about What Assault Weapons Are and Why They Are So Deadly" hyperlink) ("'Spray-firing' from the hip, a widely recognized technique for the use of assault weapons in certain combat situations, has no place in civil society."). To justify the claim, the publication includes photographs of military personnel firing machine guns in this manner. *Id.* (follow "The Gun Industry's Lies" hyperlink).

115. *See* Kopel, *supra* note 38, at 388 ("[A]lthough gun prohibition advocates sometimes use the catch-phrase 'spray-fire,' a semiautomatic firearm, unlike a machine gun, cannot 'spray fire,' because the shooter must press the trigger for each shot.").

116. W. W. GREENER, THE GUN AND ITS DEVELOPMENT 351–73 (Cassell & Co., Ltd. 9th ed. 1910) (1881).

117. *See* Kopel, *supra* note 40, at 164–67.

118. GREENER, *supra* note 116, at 434–68.

119. *Id.*

120. *Id.* at 351–52.

121. *See* PHILIP B. SHARPE, THE RIFLE IN AMERICA (Odysseus 1995) (1938).

122. *See id.*

123. *See, e.g.*, O.F. MOSSBERG & SONS, INC., OWNERS MANUAL FOR 500®, 835® AND 590® MODEL PUMP ACTION SHOTGUNS 6, *available at* http://zugzwanged.org/dat/weapons/docs/man/mossberg_500.pdf. Many shotguns are semiautomatic, though typically these have been excluded from assault weapon designation. *See* Kopel, *supra* note 40, at 164–65. A greater number are pump action, which typically have also been excluded from assault weapon designation. *Id.* Guns of each type have been made with detachable magazines. *See* Saiga-12.com, IZHMASH Saiga-12 Shotguns, http://www.saiga-12.com/ (last visited June 10, 2009). A few shotguns have been made using revolver technology. *See* HALBROOK, *supra* note 37, at 538–39. In a curious exercise of logic, though understandable symbolically, the ATF reclassified one of these revolver style guns—the menacingly-named Streetsweeper—as a class III destructive device (the same regulatory category as machine

by recoil energy (for semiautomatics), or manually for pump or slide actions.[124] While the gun is deployed, the ammunition tube may be continuously refreshed with new rounds.[125] There is no downtime to reload.[126] So not only are assault weapons unexceptional in multishot utility, they are demonstrably inferior to the ubiquitous shotgun.[127]

Comparisons between assault weapons and other repeating technologies produce similar conclusions. DBM semiautomatics like the AR-15 are reloaded from the bottom of the breech by replacing the spent magazine with a new one.[128] In contrast, the top-loading block clip employed by the semiautomatic M1 Garand (and also by one of the very first semiautomatic rifles, the Mannlicher Model 1886) will achieve roughly the same practical rate of fire in addition to firing a more powerful cartridge than the typical assault weapon.[129] After all the rounds are fired, the block clip ejects automatically from the top of the breech, and the shooter inserts a new clip into the open breech.[130] The Garand was the standard World War II battle rifle and surplus Garands have been sold directly to private citizens by the U.S. government for decades through the Civilian Marksmanship Program.[131]

Lever action rifles, familiar emblems of the Old West with typical ammunition capacity from ten to sixteen rounds, predate semiautomatic technology but are only slightly slower in multishot capability.[132] They also are continuously reloadable.[133] Revolver technology of the same

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guns). *Id.* The irony is that the gun does not exhibit the continuous reloading capacity that is the tactical virtue of the ordinary repeating shotgun. *Id.*

124. *See* MOSSBERG, *supra* note 123.

125. *Id.*

126. *Id.*

127. Shotguns do exhibit the ballistic disadvantage that the projectiles are round and fired from an unrifled barrel, are thus less aerodynamic than the spinning rifle projectile, and therefore lose velocity more quickly. *See* GREENER, *supra* note 116, at 351–404. So, depending upon size, shotgun projectiles will have lost most of their energy within 100 to 200 yards. *Id.* However, within its range, the shotgun firing various loads inflicts far more destruction on soft targets than the typical assault weapon. *Id.*

128. *See, e.g.*, BUSHMASTER FIREARMS, INC., OPERATING AND SAFETY INSTRUCTION MANUAL FOR ALL BUSHMASTER XM15 MODELS 39 (2009), *available at* http://www.ar15.com/content/manuals/manual_bushmaster.pdf.

129. *See* U.S. ARMY, DEPARTMENT OF THE ARMY FIELD MANUAL: FM 23-5 (1965), *available at* http://biggerhammer.net/manuals/garand/m1.htm; *see also* Austro-Hungarian Army, *supra* note 70 (describing the Mannlicher's block clip feeding device).

130. *See* U.S. ARMY, *supra* note 129.

131. The Civilian Marksmanship Program website gives a detailed history of the military use of the M1 Garand and the current requirements for purchasing one through the Civilian Marskmanship Program. *See* Civilian Marksmanship Program Sales, Eligibility Requirements, http://www.thecmp.org/eligibility.htm (last visited June 10, 2009); Civilian Marksmanship Program Sales, M1 Garand Sales, http://www.thecmp.org/m1garand.htm (last visited June 10, 2009).

132. *See, e.g.*, Lee, *supra* note 96. For aimed fire there are nominal distinctions in speed. *See supra* note 40 and accompanying text.

133. *See, e.g.*, U.S. REPEATING ARMS CO., INC., WINCHESTER RIFLES AND SHOTGUNS, WINCHESTER MODEL 94 LEVER ACTION RIFLE OWNER'S MANUAL—TOP-TANG SAFETY VERSION 17–18, *available at*

vintage is essentially indistinguishable from semiautomatic in terms of practical rate of fire (one shot for every trigger pull).[134]

So in context, it is difficult to say that assault weapons impose multishot capabilities that are functionally distinct from many other guns in the inventory of common firearms. Moreover, the entire focus on multishot capacity is undercut by the fact that all guns are deadly, all guns have distinct SMUs, and those utilities produce their own distinct externalities. The handgun, which is explicitly protected by *Heller*, accounts for most gun crime.[135] Assault weapons, in contrast, are very rarely used in crime.[136] So on this measure as well, the assault weapon is easily within the boundaries of protected firearms.

B. The Regulatory Paradox: Special Marginal Utilities and Peculiar Externalities

Within the inventory of common firearms, each gun type has distinct utilities at the margin that make it more or less suitable as self-defense scenarios shift. These differences in SMUs are crucial to the assault weapons distinction, but they also present a paradox. To satisfy even a threshold rational-basis analysis, the state must show that banned assault weapons have some identifiable SMUs that produces special externalities when abused.[137] Thus the paradox: if the distinction is sound—if the ban is rational—it also is an admission of special utility. And that paradox poses a pivotal constitutional question. As Justice Breyer and others have criticized, *Heller* does not tell us how to cut such knots.[138] But *Stenberg* does.

The controlling question in *Stenberg* was whether the banned D&X abortion procedure was *sometimes the better methodology* for preservation of the life or health of the mother.[139] Because D&X was found to be necessary in rare cases to preserve the life or health of the mother, the ban was deemed unconstitutional.[140] This section will examine the parallel assault weapons question: do the SMUs exhibited by assault weapons make them better alternatives than other common guns in a particular spectrum of self-defense scenarios, where by

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http://media.winchesterguns.com/pdf/om/02227_wfa_94_om_s.pdf.

134. *See, e.g.*, Sturm, Ruger & Co., Inc., Instruction Manual for Ruger® GP100® Double Action Revolver 14.

135. *Supra* notes 89–90 and accompanying text.

136. Roth, *supra* note 84, at 2.

137. *See* Kopel, *supra* note 38, at 384–85.

138. District of Columbia v. Heller, 128 S. Ct. 2783, 2864 (2008) (Breyer, J., dissenting) (while seeming to believe it cuts the other way, Justice Breyer acknowledges the paradox: "[T]he very attributes that make handguns particularly useful for self-defense are also what make them particularly dangerous.").

139. Stenberg v. Carhart, 530 U.S. 914, 929–30 (2000).

140. *Id.* at 938.

definition the life of the right-bearer is at stake? Subsection 1 will describe purely objective SMUs—physical measures that can be precisely calculated. Subsection 2 will summarize "tactical" SMUs—more subjective assessments that rely on human judgments about the relative effectiveness of different technologies.

1. Objectively Measurable Utility

The typical assault weapon fires an intermediate power cartridge that is *less destructive* than cartridges employed in sporting rifles (many of them semiautomatics) used for hunting medium to large game.[141] So on this criteria the typical assault weapon actually complements the state's interest in reducing firearms externalities. An explicit comparison is helpful.

Consider first the AR-15.[142] It is the quintessential assault weapon. It exhibits all of the objectionable features identified in the 1994 ban.[143] It typically fires a lightweight 55 to 62 grain, .223 caliber/5.56MM projectile.[144] In contrast, most hunting rifles that were broadly exempted from the 1994 ban are ballistically far superior to the AR-15.[145] Many of them are DBM, semiautomatic repeaters chambered for cartridges like the .30-06 Springfield,[146] which fires bullets three to four times heavier than the .223.[147] Two prominent examples are the Remington 7400[148] and the Browning BAR, both explicitly excluded from the 1994 ban.[149] Also excluded was the M1 Garand,[150] the U.S. Army battle rifle used in World War II and featured prominently in the film *Saving Private Ryan*.[151] In

141. *See* Kopel, *supra* note 40, at 168–69.

142. Halbrook explains that the AR-15 designation is a misnomer, and that a more accurate label might be AR-15A2 Sporter II. HALBROOK, *supra* note 37, at 700–01. However, the term "AR-15" is so commonly used that I will employ that designation.

143. *See* Kopel, *supra* note 40, at 190–93.

144. *Id.* at 168.

145. *Id.* at 168–69.

146. The cartridge is designated .30-06 because it is a .30 caliber adopted by the U.S. military in 1906 for the Springfield bolt-action infantry rifle. Craig Boddington, *.30-06: Over 95 Years Old, It Remains America's Favorite Hunting Cartridge*, PETERSEN'S HUNTING, http://www.huntingmag.com/guns_loads/30_06_springfield/ (last visited June 10, 2009). "[T]he powerful .30-06 rifle cartridge developed by the United States Government during the year 1906 . . . . is one of the best military rifle cartridges in use in the world today. . . . [A]ccurate shooting can be done with it in a rifle at over 1,000 yards." Charles T. Haven, *Military Small Arms of World War II*, *in* GUN DIGEST FIRST ED., *supra* note 69, at 55. It is perennially one of the most popular hunting cartridges in the United States. Charles Petty, *What's Really Selling?*, SHOOTING INDUSTRY, Feb. 2006, at 21.

147. *See infra* notes 153–55 and accompanying text.

148. Simpson, *supra* note 64 at 62, 63 ("[The 1950 series] was initially offered only in .30-06 . . . .").

149. *See* Kopel, *supra* note 40, at 209.

150. *Id.* at 204–09.

151. The Internet Movie Firearms Database, Saving Private Ryan, http://www.imfdb.org/index.php/Saving_Private_Ryan (last visited June 10, 2009). It is ironic that the Garand was exempted under the ban, *see* Dave Kopel, *Bait-'n'-Switch: Gun-prohibition lobbyists are after much more than AK-47s*, NAT'L REV. ONLINE, Sept. 13, 2004, http://www.nationalreview.com/kopel/kopel200409130630.asp, since it is not merely a military-*style* weapon, but rather the real thing. *See* The Patton Soc'y, The M1

appearance the Garand seems closer to the Remington or the Browning. It features a traditional wood stock and has none of the typical assault weapon features except for an unobtrusive bayonet lug.[152]

The .30-06 cartridge, fired by the Remington, the Browning, and the Garand as fast as one can pull the trigger, propels a 150-grain bullet (nearly three times heavier than the 55-grain projectile typical for the AR-15) at 3100 feet per second producing muzzle energy of 3200 foot-pounds.[153] At 400 yards it is still traveling at 2058 feet per second, carrying 1410 foot-pounds of energy.[154] In contrast, the far smaller and lighter .223 fired by the aggressively-styled AR-15 produces 1282 foot-pounds of energy at the muzzle and 296 foot-pounds at 400 yards.[155] These measures for the .223 are from a test barrel that is typically six to eight inches longer than the sixteen-inch barrel of the most aggressively styled "M4 clone" version of the AR-15 (distinguished by the shorter barrel and adjustable stock).[156] As barrel length decreases, so does destructive energy because the pressure in the short barrel is dissipated in the atmosphere instead of building behind the bullet for a longer time and space.[157]

The physics are plain. The 1994 ban outlawed guns that are demonstrably less lethal than millions of government-approved "sporting" guns and countless actual military rifles that just do not look very dangerous. The ballistic superiority of many sporting guns is not a function of more recent or more advanced technology; some of the earliest semiautomatic "sporting" rifles manufactured in America produce more destructive energy than the AR-15.[158] Moreover, many exempt semiautomatic "sporting" rifles are available in cartridges that are ballistically superior even to the .30-06. For example, the previously-discussed Remington and Browning semiautomatics are available in

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Garand Rifle, http://www.pattonhq.com/garand.html (last visited June 10, 2009). It is an actual government-issued infantry rifle—a military weapon that General George S. Patton, Jr. called the "greatest battle implement ever devised." *Id.*

152. The United States Civilian Marksmanship Program web site offers multiple illustrations and a detailed description of the Garand. *See supra* note 131; *see also* The Patton Soc'y, *supra* note 151.

153. *Average Centerfire Rifle Cartridge Ballistics and Prices* [hereinafter *Ballistics and Prices*], *in* GUN DIGEST 2007: THE WORLD'S GREATEST GUN BOOK 229, 232 (Ken Ramage ed., 61st ed. 2006); *see also* Haven, *supra* note 69, at 55 ("[T]he powerful .30-06 rifle cartridge developed by the United States Government during the year 1906 . . . . is one of the best military rifle cartridges in use in the world today. . . . [A]ccurate shooting can be done with it in a rifle at over 1,000 yards.").

154. *Ballistics and Prices*, *supra* note 153.

155. *Id.* at 229.

156. *Id.*

157. *See* GREENER, *supra* note 116, at 566.

158. The Remington Model 8 (first sold in 1906) chambered in .35 Remington fires a 200-grain bullet and produces 1921 foot-pounds of energy at the muzzle. *Ballistics and Prices*, *supra* note 153, at 233; Remington.com, *supra* note 70. Compare the 1282 foot-pounds of muzzle energy from the AR-15 firing the .223. *See Ballistics and Prices*, *supra* note 153, at 229.

magnum calibers like the .338 Winchester Magnum, which generates nearly double the ballistic energy of .30-06 (again, firing as fast as one can pull the trigger).[159]

True, at some point discussions about muzzle energy become moot. The practical difference between the .30-06 and the .338 in terms of lethality at usable distances may be negligible. But that is because both calibers are in the same ballistic category.[160] However, the intermediate cartridges fired by the typical assault weapon are in a lower power class.[161] They are less lethal across their entire ballistic range.[162] Indeed, as a hunting cartridge, the .223 (the AR-15 cartridge) is widely considered suitable only for "varmints" (e.g., ground squirrels or prairie dogs). In many places it is illegal for hunting deer or other medium-to-large game because it tends just to wound rather than cleanly kill the animal.[163]

The ballistic inferiority of the assault weapon is a matter of conscious design.[164] The typical assault weapon cartridge is explicitly intended to wound rather than kill.[165] So ballistically, not only is the AR-15 not exceptionally dangerous, its lower lethality actually complements the state interest in controlling negative externalities. And from the perspective of the gun user, these ballistic characteristics translate into another important utility.

For many older, weaker, or smaller people, the relatively low-powered assault weapon offers an easier learning curve, less punishing practice, and an ease of use that is unmatched by other choices. The semiautomatic configuration, whose repeating mechanism uses some of the energy that otherwise would contribute to recoil, makes the gun more manageable than other technologies firing the same cartridge.[166]

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159. *See supra* note 153.

160. *Ballistics and Prices*, *supra* note 153, at 231–33.

161. *Id.* at 229.

162. *See* Kopel, *supra* note 40, at 168–70.

163. *See, e.g.*, CONN. DEP'T OF ENVTL. PROT., CONNECTICUT HUNTING AND TRAPPING GUIDE 4, 9–13 (2009), *available at* http://www.ct.gov/dep/lib/dep/hunting_trapping/pdf_files/fg2009.pdf (requiring .243 minimum caliber for deer hunting: "Legal Firearms: 12, 16, or 20 gauge breech loading shotgun loaded with single soft alloy projectile ammunition. Rifled or smoothbore barrels allowed. Shotgun must not be capable of holding more than 3 shells. Centerfire rifle 6mm (.243 caliber) or larger, or muzzleloader (.45 caliber minimum).").

164. Kopel, *supra* note 40, at 169 ("The great irony . . . is that [assault weapons] are the only rifles that have ever been designed not to kill. The semi-automatic rifles use the same ammunition as battlefield weapons such as the M16, which deliberately use intermediate-power ammunition intended to wound rather than to kill. The theory is that wounding an enemy soldier uses up more of his side's resources (to haul him off the battlefield and then care for him) than does killing an enemy.").

165. *Id.*

166. *See, e.g.*, ShotgunLife.com, Women and Shotguns, Good Form and Shotgun Recoil, http://www.shotgunlife.com/Women-Shooters/women-and-shotguns.html (last visited June 10, 2009) ("Semi-automatic shotguns—or autoloaders as they're also known—are prized for their low felt recoil compared with over/unders. A semi-automatic uses some of the expanding gases from the fired shell to cycle the next one into the chamber. So rather than you absorbing the full force of the shot, a semi-

Comparatively, the substantial recoil from the shotgun disqualifies it as a defensive tool for many people.[167] The same is true for medium-to-large game sporting rifles.[168] The recoil from many of these is punishing, bruising, and makes practice, and therefore proficiency, difficult.[169] Even the M1 Garand, though its recoil is reduced by its semiautomatic design, produces comparatively much greater recoil because it fires the powerful .30-06 cartridge.[170] The Garand is also relatively heavy and long, making it generally difficult for smaller people to manipulate.[171]

Assault weapons also present ergonomic and operational advantages over alternatives. The typical assault weapon is easily fixed with optics that enhance aiming and accuracy.[172] The carbine length of the typical

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automatic puts that energy to good use.").

167. *See id.* Expert gun fitters address part of the problem, but for people who cannot afford or do not even know about such services, "an ill-fitting shotgun heightens felt recoil. If you're unable to properly press the shotgun against your shoulder and face, the felt recoil could hurt like crazy." *Id.* at 2; *see also* Diane Campbell, *Shotgun Training Tips for Female and Smaller Officers*, POLICEONE.COM, July 6, 2007, http://www.policeone.com/police-products/firearms/shotguns/articles/1287382-Shotgun-training-tips-for-female-and-smaller-officers/ ("Let's face it. Many officers, particularly female and smaller officers, may be just plain afraid of shotguns. Whether real or imagined, the shotgun has a reputation for being painful. Often this reputation comes from poor training, too heavy a load or just incorrect handling. This really is a shame, since the shotgun is such a versatile use-of-force tool for law enforcement as well as home defense.").

168. Chuck Hawks, Remington Managed-Recoil Cartridges, http://www.chuckhawks.com/rem_managed_recoil.htm (last visited June 10, 2009) [hereinafter Hawks, Remington] ("Although many will not admit it, most hunters find cartridges on the order of the .270, 7mm Magnum, .308, and .30-06 somewhat intimidating to shoot. And very few shooters are really comfortable shooting a .300 Magnum."); *see also* Chuck Hawks, The Powerful .300 Magnums, http://www.chuckhawks.com/300magnum.htm (last visited June 10, 2009) ("The .300 Magnums are generally regarded as suitable for game from the size of deer and antelope to the largest thin-skinned game worldwide. . . . The main drawback to any of the .300 Magnums is recoil, which is more than most shooters can handle. . . . Many professional guides in North America are suspicious of customers who show up with .300 Mag. rifles until they prove they can shoot their formidable rifles accurately.").

169. *See supra* note 168.

170. *See supra* note 153 and accompanying text.

171. *See, e.g.*, *All Things Considered, Book Explores History of the American Rifle* (NPR radio broadcast Dec. 21, 2008) (transcript available at http://www.npr.org./templates/story/story.php?storyId=98578531). The difference is illustrated anecdotally in this interview with Alexander Rose, author of *American Rifle: A Biography*. The interviewer, a young woman, fires an M1 Garand and then an AR-15. She comments unenthusiastically that the Garand is "heavy." *Id.* There is no on-air comment about the recoil but people who have fired the Garand can imagine that interesting things did not make it on air. The Garand hurts to shoot. Her comment about the AR-15 puts things in perspective. "It's a scary looking black thing," she says. *Id.* Then after firing it, "That was easy. It does not kick back at you." *Id.* This last comment was obviously in contrast to the heavy-recoiling Garand. This difference is the essence of controllability. As a self-defense gun, the Garand (and many more powerful, heavier hunting guns) by many estimates would be too much gun for a woman of average strength and build, and perhaps many others. *See id.* The AR-15 in contrast would not.

172. *See* Hawks, Remington, *supra* note 168. While many sporting long guns also employ optics, those guns typically are heavier, longer, more powerful, and thus more punishing to practice with. *Id.* Shotguns similarly can be fitted with optics, but present similar disadvantages in terms of recoil, weight, and length. *Id.*

assault weapon exploits the long-gun's more stable sighting platform (the shooter stabilizes the gun at four contact points—two hands, the shoulder pocket, and the cheek weld).[173] The handgun, in contrast, is more difficult to hold steady. Even with a two-handed hold it enjoys half the contact points of the long gun, and then requires the user to employ open sights, which means aligning three different planes of sight (rear sight, front sight, and target).[174] This is harder to do as people age.[175] Moreover, at any age, proficiency with the handgun requires more practice and a higher level of skill and dexterity. In fact, some double action revolvers have such heavy trigger pulls that many adults cannot operate them.[176]

2. *Tactical (Subjective) Special Marginal Utilities*

Some assault weapon SMUs are more subjective in the sense that users, both ordinary and expert, will exhibit different personal preferences for them as self-defense scenarios shift.[177] Among professional trainers of both police and civilians, the assault weapon is widely recommended as the most versatile and effective self-defense tool.[178] Professional instructors list ruggedness, ergonomics, accuracy, low recoil, versatility, and other tactical advantages that make the assault weapon a premium self-defense technology.[179] This is especially true for the AR-15, whose military and law enforcement pedigree means that "the top tactical minds of our generation have figured out the best ways to use AR-platform guns in all sorts of scenarios."[180] Because the assault weapon typically fires a ballistically intermediate round, it recoils less

173. *See* HAL W. HENDRICK ET AL., HUMAN FACTORS ISSUES IN HANDGUN SAFETY AND FORENSICS (2007).

174. *See id.*

175. *See, e.g.*, Donald L. MacDaniel, *Pistol Shooter's Rx for Tired Eyes*, AM. RIFLEMAN, May 1984, at 37; Robert B. Pomeranz, *Aging Eyes and Iron Sights*, AM. RIFLEMAN, Sept. 1995, at 34.

176. For example, a nineteen-year-old student of mine, who had aspirations to join the state police, found it impossible to complete the double action trigger pull on a Smith and Wesson Model 28 "Highway Patrolman" revolver double action. He was 5'9" and weighed 140 pounds. He was an athlete and a very good runner, but he did not have the hand strength to fire the gun without first cocking it into single action mode.

177. Preference for the AR-15, for example, has been driven by popular firearms trainer Clint Smith's development of the "Urban Rifle" doctrine. Tiger McKee, *Simplify for Success: The Basic AR Fighting Rifle*, GUNS MAG., COMBAT SPECIAL EDITION 2009, at 44, 46.

178. *See, e.g.*, Bane, *supra* note 79, at 58–61 ("The numbers are staggering. AR-platform guns are approaching handgun-level sales . . . . [E]rgonomics, coupled with ease of operation, light weight and the negligible recoil from the 5.56 cartridge, make AR-platform guns a blast to shoot. As an instructor, . . . [n]ow I use an AR[] [for totally new shooters.] . . . The more I've worked with the carbine, the more I've found myself 'defaulting' to the AR for a self-defense role."). Bane says the only reason he needs a handgun is to get to his rifle. *Id.* Over the past twenty years, I have taken scores of novices to the shooting range. Without exception, they find the low-powered semi-automatic rifle easier to shoot than the handgun.

179. *Id.*

180. *Id.* at 60.

than high-power or magnum guns.[181] So owners of assault weapons will tend to practice more and thus should be more capable in emergencies.[182]

A separate utility appears in the militia context. As elaborated in *Heller*, the Second Amendment protects the armed citizenry from which the militia may be drawn.[183] In emergencies, citizens appearing with their own guns become a public resource.[184] People will dispute the usefulness of the unorganized militia in modern America, but with its constitutional pedigree established in *Heller*, it is an important question whether certain types of guns serve that interest more than others.

The assault weapon is the quintessential militia rifle. The AR-15, for example, is a semiautomatic rendition of the U.S. military infantry rifle, with the important difference that it does not have automatic or burst-fire capability.[185] But otherwise, the mechanics and controls are the same and it uses the same magazines and ammunition.[186] In emergencies where the militia becomes an important resource, civilians who are familiar with or own such guns will be more useful than others as adjuncts to public security forces.

While the militia utility anticipates a community response to public emergencies, public emergencies also generate private risks. In other work, I have described private guns held for these occasions as "stormy-day" guns[187]—firearms held for episodes like those anticipated by the National Governors Association when it complained that the heavy use of the National Guard in war fighting leaves states vulnerable in an array of public emergencies.[188] The assault weapon is the model stormy-day gun. Its multishot capability neutralizes the numerical advantage of multiple aggressors or a mob.[189] The intermediate cartridge operates to

181. *See* HALBROOK, *supra* note 37; Kopel, *supra* note 40, at 168–69.

182. See *supra* Part II.B.1 for discussion of intermediate ballistics.

183. District of Columbia v. Heller, 128 S. Ct. 2783, 2815 ("The traditional militia was formed from a pool of men bringing arms 'in common use at the time' for lawful purposes like self-defense.").

184. *See, e.g.*, Kopel, *supra* note 40, at 194–95 (describing situations where armed citizens helped restore public order after disasters).

185. *Id.* at 163; *see also* AR15.com, Home of the Black Rifle, http://www.ar15.com/ (last visited June 10, 2009). Some variations of the M16 fire three rounds per trigger pull. For a discussion of this "burst" capability, see Military Analysis Network, Fed'n of Am. Scientists, M16A2 5.56mm Semiautomatic Rifle, M4/M4A1, http://www.fas.org/man/dod-101/sys/land/m16.htm (last visited June 10, 2006).

186. *See* BUSHMASTER, *supra* note 128.

187. Johnson, *supra* note 1, at 861–63. Others have used the term "Katrina Rifle" to connote the same thing. *See* David Kenik, *Katrina Rifle*, *in* GUNS & AMMO: BOOK OF THE AR-15, Feb. 2009, at 86.

188. *See, e.g.*, Robert Pear, *Bush Policies Are Weakening National Guard, Governors Say*, N.Y. TIMES, Feb. 27, 2006, *available at* http://www.nytimes.com/2006/02/27/politics/27govs.html ("Governors of both parties said Sunday that Bush administration policies were stripping the National Guard of equipment and personnel needed to respond to hurricanes, floods, tornadoes, forest fires and other emergencies.").

189. Kopel, *supra* note 40, at 175.

neutralize both a wounded attacker and his caretakers.[190] This same feature lessens the burden on innocents when the gun is abused.[191] The appearance of the assault weapon is distinct enough even at a distance to achieve deterrence by brandishing.[192] Other guns are decidedly inferior stormy-day options. The handgun, by definition a last-ditch tool limited essentially to contact distance, would be useful only at distances where it may be too late to fight back.[193] Shotguns and hunting-caliber rifles are inferior because they recoil harder and thus are harder—and for some, impossible—to use.[194] The rational actor, thinking about self-defense under a range of circumstances, has sound reasons to count the assault weapon as the best alternative in the inventory of common firearms.

III. ASSAULT WEAPON BANS AND THE *STENBERG* STANDARD

The discussion so far shows that assault weapons fit comfortably within the category of common firearms nominally protected under *Heller*[195] and that they exhibit SMUs that are especially important to particular types of people and in particular categories of self-defense. But what happens when the SMUs of common firearms are claimed to produce peculiar externalities that the state wants to combat by banning them? The question takes us beyond *Heller*. But it is the core of *Stenberg*. Substituting firearms "technologies" for abortion "methodologies," whether to protect the special life-saving utilities of assault weapons against a government ban that forces reliance on lesser alternatives, is the question of principle answered in *Stenberg*.

At first glance the assertion of broad parallels between abortion and gun rights jurisprudence seems odd. However, on core principles there is a broad intersection between the two claims. This is evident from the many treatments that build the abortion right on the self-defense principles that undergird *Heller*.

More than a decade ago, I showed that the ideas and principles used by the Court and scholars to draw the unenumerated right to abortion out of the Constitution run remarkably parallel to, and in core cases build directly upon, arguments and principles supporting a constitutional

190. *Id.* at 168.

191. *See supra* note 164 and accompanying text.

192. *See* Gary Kleck & Marc Gertz, *Armed Resistance to Crime: The Prevalence and Nature of Self-Defense with a Gun*, 86 J. CRIM. L. & CRIMINOLOGY 150, tbl.3 at 185 (1995) (indicating that the vast majority of civilian defensive gun uses are brandishing scenarios where the gun is not fired).

193. *See* FBI, U.S. DEP'T OF JUSTICE, LAW ENFORCEMENT OFFICERS KILLED AND ASSAULTED 2004, at 6 (2005), *available at* http://www.fbi.gov/ucr/killed/2004/downloads/LEOKA04.pdf (indicating that confrontations with handguns occur at very close distances where few shots are fired and the person involved often misses).

194. *See supra* notes 167–71 and accompanying text.

195. *See* 128 S. Ct. 2783, 2717–22 (2008).

right to arms for self-defense.[196] That article, *Principles and Passions*, argued that the "standard position of the left" perversely disparages claims of a right to armed self-defense under the Second Amendment, but exalts a derivative and relatively weaker unenumerated right to abortion.[197] As the analysis here will show, the standard position endures and is reflected in the abortion and gun jurisprudence of the Court's liberal wing. This, attitudinalists will say, is exactly what we should expect.[198]

I will show here how the assault weapons question raises parallel issues of special self-defense utility and how the Court's treatments of the abortion and gun questions invoke the attitudinalist critique. Section A summarizes the argument that there are controlling parallels between the abortion and gun rights claims. Section B extends that argument to the particular parallels between assault weapons and partial-birth abortion as evaluated under *Stenberg*, and illustrates the burden of principle *Stenberg* poses for the liberal wing of the Court. Section C incorporates the Court's treatment of partial-birth abortion in *Gonzales* which, in its constriction of *Stenberg*, poses for Court conservatives a similar but lesser rendition of the attitudinalist challenge.

A. Self-Defense and the Derivative Right to Abortion

As I highlighted in *Principles and Passions*, one of the obvious illustrations of the abortion/gun rights parallel is Donald Regan's effort to situate the abortion right within the spectrum of permissible self-defense scenarios.[199] Regan begins with the model case of self-defense against a willful criminal attacker.[200] After many contortions, he plots at the far end of the self-defense spectrum several weaker scenarios he says are analogous to the self-defense claim of a woman who chooses abortion in order to avoid the physical trauma of child birth.[201] Regan's analysis is particularly important because it shows the relative strengths of the abortion and self-defense claims. The strongest abortion claim is where the mother risks death or serious injury by continuing the pregnancy. In those narrow circumstances, abortion is just like the model self-defense case.[202] But in the vast majority of abortions there is no

196. *See* Johnson, *supra* note 12, at 115; *see also* Nicholas J. Johnson, *Self-Defense?*, 2 J.L. Econ. & Pol'y 187, 199 (2006).

197. Johnson, *supra* note 12, at 99–100.

198. *See* Dorf, *supra* note 22, at 498–99.

199. Johnson, *supra* note 12, at 102–09 (critiquing Donald H. Regan, *Rewriting* Roe v. Wade, 77 Mich. L. Rev. 1569 (1979)).

200. Regan, *supra* note 199, at 1611.

201. *Id.* at 1611–13.

202. *Id.* at 1613–16.

threat to the life of the mother.[203] So under Regan's analysis, most abortion claims are qualitatively weaker than most self-defense claims.

Regan's arguments have generated a wide following, and were even invoked by Justice (then Judge) Ginsburg in her own commentary supporting the abortion right.[204] Regan's is one of many essays and articles that I critiqued in *Principles and Passions*.[205] A second is Judith Thomson's effort to justify abortion as a matter of moral philosophy.[206] Cass Sunstein has said that Thomson and Regan provide the strongest justifications for a constitutional right to abortion.[207]

Through a series of self-defense analogies, Thomson argues that, even conceding that the fetus is a person at conception, with a life-interest equal to the mother's, abortion still can be justified.[208] She posits the case of a mother trapped in a very small house with a rapidly growing child.[209] The child is growing at such a rate that it threatens to crush the mother against the walls of the house.[210] Here, she insists, we cannot say that the mother "can do nothing, that [the mother] cannot attack it to save [her] life."[211] Her analysis rests on a right of self-defense that she presumes is a universal value so fundamental that it can carry by slim analogy[212] a broad right to abortion.[213]

In 1989, Susan Estrich and Kathleen Sullivan argued, among other things, that abortion was at the heart of constitutionally protected choices because "few decisions can more importantly alter the course of one's life than the decision to bring a child into the world."[214] The self-

203. *See* Stenberg v. Carhart, 530 U.S. 914, 1020 (2000) (Thomas, J., dissenting); Lilo T. Strauss et al., *Abortion Surveillance—United States, 2002*, MMWR SURVEILLANCE SUMMARIES, Nov. 2005, at 6, *available at* http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5407a1.htm.

204. Ruth Bader Ginsburg, *Some Thoughts on Autonomy and Equality in Relation to* Roe v. Wade, 63 N.C. L. REV. 375, 383 n.61 (1985) (citing Regan, *supra* note 199).

205. Johnson, *supra* note 12, at 102–09.

206. *See id.* at 110–15 (critiquing Judith Jarvis Thomson, *A Defense of Abortion*, 1 PHIL. & PUB. AFF. 47 (1971)). Thomson's article preceded Regan's by nearly eight years. My colleagues in the social sciences who witnessed the impact of her essay suggest that all similar arguments are derivative of Thomson's. For example, Mane Hajdin, a Lecturer in Philosophy at Santa Clara University, expressed such a view to me in conversation. My ordering of the articles here reflects the position of Regan's article within the law review genre.

207. Cass R. Sunstein, *Neutrality in Constitutional Law (with Special Reference to Pornography, Abortion, and Surrogacy)*, 92 COLUM. L. REV. 1, 31 n.120 (1992).

208. Thomson, *supra* note 206, at 48–50.

209. *Id.* at 52.

210. *Id.*

211. *Id.*

212. The analogy is slim because only a fraction of abortion cases present a threat to the life of the mother. *See supra* note 203 and accompanying text.

213. Johnson, *supra* note 12, at 110–15.

214. Susan R. Estrich & Kathleen M. Sullivan, *Abortion Politics: Writing for an Audience of One*, 138 U. PA. L. REV. 119, 127 (1989).

defense choice presents obviously higher stakes. It is not the course of one's life, but one's very existence that is at stake.

Estrich and Sullivan presented their arguments explicitly as an appeal to Justice O'Connor, at the time the only woman on the Court.[215] By 1992, Justice O'Connor stood with the majority in *Planned Parenthood of Southeastern Pennsylvania v. Casey*, concluding that the abortion right involves choices "central to personal dignity and autonomy, [that] are central to the liberty protected by the Fourteenth Amendment. At the heart of liberty is the right to define one's own concept of existence, of meaning, of the universe, and of the mystery of human life."[216] Liberty, said the Court, includes more than those rights already guaranteed by the first eight Amendments to the Constitution.[217] The Court further explained that the

> full scope of the liberty guaranteed by the Due Process Clause cannot be found in or limited by the precise terms of the specific guarantees elsewhere provided in the Constitution. This "liberty" is not a series of isolated points pricked out in terms of the taking of property; the freedom of speech, press, and religion; *the right to keep and bear arms*; the freedom from unreasonable searches and seizures; and so on.[218]

It is fair then to consider the first eight Amendments—including a right to arms now affirmed in *Heller*—as the foundation of liberty guaranteed by the Fourteenth Amendment. The abortion right, plainly unenumerated, may be harder to extract but still can be plausibly inferred. The irony of the standard position is the suggestion that the Constitution inferentially protects the abortion right, but not the gun right that is rooted explicitly in the text.

Within the broader abortion/gun rights intersection, the comparison between partial-birth abortion and assault weapons claims is apt, both analytically and politically. From the view of the opposition, both assault weapons and partial-birth abortion are extreme manifestations of the contested right.[219] Both are contrasted to other less controversial manifestations of the broader right and those alternatives feed arguments that the right can be respected without permitting these especially aggressive, unnecessary, or unjustifiable renditions of it. As a quantitative matter, both represent a fraction of what opponents object

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215. *Id.* at 122–23.

216. Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 851 (1992).

217. *Id.* at 847.

218. *Id.* at 848 (emphasis added) (quoting Poe v. Ullman, 367 U.S. 497, 543 (1961) (Harlan, J., dissenting)).

219. *See, e.g.*, Stenberg v. Carhart, 530 U.S. 914, 983 (2000) (Thomas, J., dissenting) ("From reading the majority's sanitized description, one would think that this case involves state regulation of a widely accepted routine medical procedure. Nothing could be further from the truth. The most widely used method of abortion during this stage of pregnancy is so gruesome that its use can be traumatic even for the physicians and medical staff who perform it."); *supra* note 63.

to.[220] Both present a tragedy of competing interests—neither the mother nor the self-defender wants to destroy another life-interest and each is pushed by exigency to the decision. Both are vigorously defended by supporters on the view that the constitutional protection is fragile and that defeat in this limited context would not end the controversy, but just embolden opponents who oppose the right absolutely.[221] Both demand analysis that many people find repugnant—for example, the graphic comparisons of late term abortion procedures or discussions of relative wound ballistics between assault weapons and hunting rifles.

B. A Right to Better Methodologies for Preserving Life and Health: *Stenberg*, *Gonzales*, and the Attitudinalist Challenge

Dissenting in *Heller*, Justice Breyer complained that the majority failed to supply a standard of review for future cases.[222] Ironically, on the discrete question of assault weapons, Justice Breyer's majority opinion in *Stenberg* provides an especially apt methodology for administering the competing interests of the right-bearer and the state.

Stenberg involved a challenge to Nebraska's ban on the controversial D&X abortion procedure, described by the statute as "partial birth abortion."[223] The Court held the statute unconstitutional because it failed to include an exception where the doctor judged the procedure necessary to protect the life or health of the mother.[224] A very similar procedure, D&E (which Justice Stevens argued is nearly indistinguishable from D&X)[225] remained legal, as did the full range of less controversial, earlier-term abortion procedures.[226] So, just like the assault weapons case, the Court already had recognized the core right (abortion) but now wrestled with the right-bearer's claim to a particular controversial variation.

Stenberg's protection of methodological variations best suited to saving the life of the right-bearer extends smoothly to the assault weapons question, and on several points actually applies more easily to the assault weapons case. This raises for the *Stenberg* majority the attitudinalist challenge. Is *Stenberg* advanced on a point of principle? If so, then it should extend to the demonstrably easier case of assault weapons. Perhaps, though, *Stenberg* just confirms the attitudinalist proposition and is a predictable manifestation of the standard position—unprincipled, political, a mere reflection of tribal allegiances. If so, then

220. *See, e.g.*, *supra* notes 72, 203 and accompanying text.
221. *See* Johnson, *supra* note 12, at 170–74.
222. 128 S. Ct. 2783, 2869 (2008) (Breyer, J., dissenting).
223. 530 U.S. at 921–22.
224. *Id.* at 937–38.
225. *Id.* at 946–47 (Stevens, J., concurring).
226. *Id.* at 938 (majority opinion).

the assault weapons claim, though stronger, will be denied the protections Court liberals established for partial-birth abortion.[227]

As summarized in the Introduction, the Court treated the partial-birth abortion question again in *Gonzales v. Carhart*.[228] This time, Court conservatives were in the majority and they predictably resurrected several of the arguments from their dissents in *Stenberg*—arguments that weaken *Stenberg* and diminish the support the assault weapons claim draws from it.[229] *Gonzales*, for example, gives the state more leeway to restrict methodologies "necessary" to protect the life of the right-bearer, where adequate alternatives are available.[230] This and other arguments advanced in *Gonzales* may ultimately expose Court conservatives to the attitudinalist challenge.

Subsection 1 will elaborate the parallels between the assault weapons and partial-birth abortion claims, apply the principles developed by the *Stenberg* majority to the assault weapons claim, and elaborate the attitudinalists' challenge that *Stenberg* poses for Court liberals. Subsection 2 will focus on the dissenters' criticisms of *Stenberg* to show how the parallel assault weapons question avoids those objections and is thus the stronger claim. Subsection 3 will evaluate how *Gonzales*, which diminishes *Stenberg* in key areas, raises the attitudinalist challenge for Court conservatives.

1. Stenberg *Principles and the Assault Weapons Intersection*

Stenberg protects the right-bearer's access to marginally better methods of abortion where her life or health is at stake.[231] This right to "better" variations of the broadly protected right to abortion prevails in the face of empirical dispute over whether the methodology really is better,[232] over empirical objections that it is actually worse (riskier),[233] over objections that it cannot really be distinguished from other available methodologies,[234] and over objections that the state's interest in regulating the procedure is extraordinarily powerful, because it borders

227. Justice Breyer, for example, seems stuck with his commitment in *Stenberg* to robust protection of even marginally better methods for exercising the contested right, where the life or health of the right-bearer is on the line. But his dissent in *Heller* emphatically rejects this same essential argument and advances instead the view that certain types of guns pose externalities (gun crime) that justify banning the entire category (handguns, seemingly regardless of their defensive utility), and not to worry because any individual right to arms is respected by allowing citizens to have some type of gun. *See* 128 S. Ct. at 2863–66 (Breyer, J., dissenting).

228. 127 S. Ct. 1610, 1619 (2007).

229. *Stenberg*, 530 U.S. at 958–59 (Kennedy, J., dissenting).

230. 127 S. Ct. at 1638.

231. 530 U.S. at 929–30.

232. *Id.* at 933–37.

233. *Id.* at 933–35.

234. *Id.* at 946–47 (Stevens, J., concurring).

on infanticide.[235] These positions and the principles that support them transfer readily to the assault weapons question.

a. Protecting Best Methodologies for Preservation of Life and Health

The *Stenberg* majority flatly rejects the assertion that the constitutional right to abortion is adequately respected by the availability of safe alternatives to the disputed D&X procedure.[236] Writing for the majority, Justice Breyer makes plain that where the woman's life or health is at stake, she is entitled to the superior abortion procedure.[237] Even postviability, the government's interest in the life of the fetus must give way to medical judgments that the procedure is necessary to preserve the life or health of the mother.[238]

Stenberg's protection of better methodologies for exercising a core constitutional right speaks squarely to the self-defender's parallel interest in the best tool for particular categories of self-defense.[239] Indeed, people who cannot manage the weight or recoil of a heavier, more powerful gun, or the dexterity demands of the handgun,[240] have a substantially different and stronger claim. For them, the assault weapon may *always* be the better alternative.

b. The Dispositive Empirical Question: Is the Disputed Methodology Never the Best Option?

The empirical debate over whether D&X is ever the best alternative for saving the life or health of the mother sharpens the core message of *Stenberg*: If the state can show that the contested methodology is *never* the best option for protecting life or health, then the partial-birth abortion ban is permissible.[241] According to the majority, the State simply

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235. *Id.* at 958–59 (Kennedy, J., dissenting) ("The fetus, in many cases, dies just as a human adult or child would: It bleeds to death as it is torn limb from limb. . . . Dr. Carhart . . . testified [that] he knows of a physician who removed the arm of a fetus only to have the fetus go on to be born 'as a living child with one arm.'" (citation omitted) (quoting Brief for Ass'n of American Physicians & Surgeons et al. as Amicus Curiae, *Stenberg*, 530 U.S. 914 (No. 99-830))).

236. *Id.* at 931–32 (majority opinion). *Compare* District of Columbia v. Heller, 128 S. Ct. 2783, 2860 (2008) (Breyer, J., dissenting) (concluding that dispute about the utility of the Washington, D.C. handgun ban required deference to the legislature "because legislators, not judges, have primary responsibility for drawing policy conclusions from empirical fact"), *with Stenberg*, 530 U.S. at 970 (Kennedy, J., dissenting) ("The Court fails to acknowledge substantial authority allowing the State to take sides in a medical debate, even when fundamental liberty interests are at stake and even when leading members of the profession disagree with the conclusions drawn by the legislature.").

237. *Stenberg*, 530 U.S. at 930–31.

238. *Id.*

239. *See* discussion *supra* Part II.B.2.

240. *See supra* notes 170–76 and accompanying text. As discussed above, in the category of long guns, the recoil and weight of the shotgun and many so-called "sporting rifles" exempted from the 1994 ban make them impractical for many smaller or weaker people. *See supra* notes 170–71 and accompanying text.

241. 530 U.S. at 937–38.

failed on the factual showing.[242] On the view of at least some medical experts, D&X "may be the best or most appropriate procedure in a particular circumstance to save the life or preserve the health of a woman."[243] In the assault weapon context the state would face the equivalent burden of showing that assault weapons are never the best self-defense option. This is difficult first because of the regulatory paradox (i.e., the claim of special externalities is also an admission of special utility).[244] Also the claimant's burden is comparatively easier because assault weapon utility is easier to quantify than partial-birth abortion utility.[245] Partial-birth abortion utility is controversial because of disputes between doctors that are in part subjective—a function of what methodology particular doctors prefer.[246] Assertions of assault weapon utility—lower recoil, less lethal ammunition—are grounded on less contestable, objectively measurable physical characteristics.[247]

Stenberg's "never the best option" filter also helps define the proper scope of state regulation in a way that supplements *Heller*'s common-use test. The demand in at least some cases that the disputed methodology be the superior option means that firearms that are always inferior and which impose special externalities would not be protected. For example, unreliable, inaccurate guns that are prone to malfunctioning or injuring the user, like the infamous zip gun[248] or the poorly identified "Saturday Night Special,"[249] might be banned on the argument that they are universally inferior and often used by people who are prohibited from having guns.[250]

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242. *Id.* at 932 ("The State fails to demonstrate that banning D&X without a health exception may not create significant health risks for women, because the record shows that significant medical authority supports the proposition that in some circumstances, D&X would be the safest procedure."). *But see* District of Columbia v. Heller, 128 S. Ct. 2387, 2852–53, 2860 (Breyer, J., dissenting) (urging deference to the legislature).

243. *Stenberg*, 530 U.S. at 932 (quoting Carhart v. Stenberg, 11 F. Supp. 2d 1099, 1126 (D. Neb. 1998)).

244. *See supra* Part II.B.

245. *See supra* Part II.B.1.

246. *Stenberg*, 530 U.S. at 964 (Kennedy, J., dissenting) (contending that by insisting on an exception to the ban where the individual doctor makes a judgment that partial-birth abortion is necessary, the majority "awards each physician a veto power over the State's judgment that the procedures should not be performed").

247. *See supra* Part II.B.1.

248. Zip Gun, UrbanDictionary.com, http://www.urbandictionary.com/define.php?term=zip%20gun (last visited June 10, 2009) (defining "zip gun" as "a crude weapon made usually in someones [sic] basement or garage").

249. See Dave Kopel, Second Amendment Project, Warren Burger and the Second Amendment, http://davekopel.org/2A/Mags/crburger.htm (last visited June 10, 2009) ("So called 'Saturday Night Specials' are small, inexpensive, low-calibre handguns, disdained by most criminals . . . .").

250. The second point may be difficult to show empirically. Also, some will object that this critique ignores the special utility of affordability—that it is not criminals but poor people who gravitate to these guns. Compare odd and idiosyncratic guns like those disguised as writing instruments, canes, or umbrellas that the ATF historically attempted to regulate more closely. *See* HALBROOK, *supra* note 37,

c. Disputed Utility: Rarity

The State argued in *Stenberg* that the D&X procedure was not a protected methodology because it was very rarely used.[251] Only a very small fraction[252] of the million or so abortions per year are D&X procedures.[253] And only a fraction of that fraction involve a threat to the life of the mother.[254] The majority rejected this argument, ruling that a burden on a particular methodology "unduly burden[s] the right to choose abortion itself."[255] Rarity of the procedure, said Justice Breyer, "is not highly relevant."[256] The deciding focus is those occasions that "could strike anyone" where D&X is the best methodology.[257] "[T]he State cannot prohibit a person from obtaining treatment simply by pointing out that most people do not need it."[258]

In the gun context, this answers the criticism that stormy days of high assault weapons utility are thankfully rare. Rarity, Justice Breyer emphasizes, "is not highly relevant."[259] The deciding factor is that assault weapons exhibit special utilities in particular scenarios, "which could strike anyone."[260] The state cannot deny right-bearers who require the SMUs of assault weapons on the argument that "most people do not need" them.[261]

Realize also that the rarity-parallel gains an extra feature in the assault weapons case because the assault weapon is not just a stormy-day tool. For smaller, weaker people, strength and dexterity requirements of shotguns or handguns eliminate them entirely as alternatives.[262] For many of those people, assault weapons might *always* be better self-defense tools.

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at 529.

251. 530 U.S. at 933.

252. The *Stenberg* Court noted that there is "no reliable data on the number of D&X abortions performed annually. Estimates have ranged between 640 and 5,000 per year." *Id.* at 929.

253. Strauss et al., *supra* note 203, at 1.

254. *Id.*

255. *Stenberg*, 530 U.S. at 930.

256. *Id.* at 934 ("[C]ertain of the arguments are beside the point. The D&X procedure's relative rarity (argument (1)) is not highly relevant.").

257. *Id.*

258. *Id.*

259. *See id.*

260. *See id.* The comparative numbers for self-defense of course are contested. *Compare* Kleck & Gertz, *supra* note 192, at 164 (finding that up to 2.5 million Americans use guns defensively each year), *with* Philip J. Cook et al., *The Gun Debate's New Mythical Number: How Many Defensive Uses Per Year?*, 16 J. POL'Y ANALYSIS & MGMT. 463, 465 (1997) (estimating 1.5 million defensive gun users). In most defensive gun uses, the gun is not actually discharged. KLECK, *supra* note 59, at 162. This suggests that the appearance of the gun has substantial deterrent value. If this is right, the appearance of the assault weapon—its nonsporting features—should have higher deterrent value than others.

261. *See Stenberg*, 530 U.S. at 934.

262. *See supra* Part II.B.1.

The *Stenberg* Court takes the point a step further, acknowledging that rarity might reflect that D&X truly has no special utility.[263] Empirically there was strong evidence to support this,[264] but the dispute was resolved in favor of the right-bearer.[265] So even if there is dispute about stormy-day utility or whether assault weapons are a better choice for people who cannot be proficient with other guns, *Stenberg* principles dictate that plausible claims of SMU trump gun bans. Remember also the state's dilemma. Unless the assault weapon does in fact have some special utility, the initial decision to ban it is not even rational.[266] But, says *Stenberg*, once demonstrated, this utility, *even if rarely accessed*, trumps the state's countervailing interest.[267]

d. Asserted Disutility: The Contested Methodology Imposes Greater Risks than Available Alternatives

One contention in *Stenberg* was that the D&X procedure actually posed a *greater* health risk to the mother than available alternatives.[268] The district court rejected this claim on the evidence,[269] but the argument opens a useful comparison to the assault weapons question. First of all, no one has shown, and no facts suggest, that the assault weapon presents a greater risk to the user than other types of firearms. On this point the assault weapons claim is stronger.

Some will object that the proper question is whether the assault weapon poses peculiar externalities—risks to the population at large. But even loosening the analogy to accommodate that question, the argument that the assault weapon poses greater risks does not survive the factual inquiry. It is indisputable that the handgun inflicts exponentially greater costs than the assault weapon.[270] Also, the typical assault weapon, which by definition fires an intermediate cartridge, is ballistically inferior to most deer rifles (many of which are semiautomatics),[271] so it actually complements the state interest in limiting negative externalities.

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263. 530 U.S. at 934.

264. *See id.* at 935.

265. *Id.* at 938.

266. *See supra* text accompanying note 137.

267. *See supra* text accompanying note 241.

268. 530 U.S. at 935.

269. *Id.* at 932.

270. *See* District of Columbia v. Heller, 128 S. Ct. 2783, 2856–59 (2008) (Breyer, J., dissenting) (discussing extent of handgun violence); CHRISTOPHER S. KOPER ET AL., UNIV. OF PA., AN UPDATED ASSESSMENT OF THE FEDERAL ASSAULT WEAPONS BAN: IMPACTS ON GUN MARKETS AND GUN VIOLENCE, 1994–2003, at 3 (2004), *available at* http://www.sas.upenn.edu/jerrylee/research/aw_exec2004.pdf (noting that assault weapons were used in only a small fraction (2–8%) of gun crimes before the 1995 ban).

271. Ballistically it is difficult to sustain the argument that the assault weapon imposes more risk than a "sporting" long gun, say in the .300 Magnum category, or one of the "approved semiautomatics" from the last ban, like the M1 Garand. *See supra* Part II.A.2.

Finally, any argument that the assault weapon imposes special net risks is difficult to sustain because the utilities and the externalities of all firearms are just different sides of the same coin. The things that make the assault weapon or any other gun useful for legitimate self-defense become negative externalities where the gun is used for crime. The assault weapons distinction rests on the implausible assertion that particular features have personalities—with some features dedicated to good and others committed to evil. The truth, of course, is that guns and their features function the same way no matter who operates them. So if the assault weapon has a distinct SMU, right-bearers generally will have an interest in it that *Stenberg* says we must respect.

e. Disputed Utility: Erring for the Right-Bearer

Acknowledging the deep dispute over the utility of D&X, the *Stenberg* majority protected the abortion right by resolving ambiguities against the government.[272] The empirical case for D&X utility was so deeply contested that the Court did not demand "absolute proof" of SMU.[273] "[U]nanimity of medical opinion" was not required, and the Court resolved the "differences of medical opinion" about the utility of D&X in favor of the mother in order to avoid "unnecessary risk of tragic health consequences."[274] And if it turns out the Court is wrong about the utility of D&X, said Justice Breyer, then that is a lesser harm because "*the exception will simply turn out to have been unnecessary*."[275]

The parallel assault weapons claim is clearer and easier to evaluate because much of it is objectively measurable (i.e., weight, recoil, and lower lethality). These factors weigh in favor of assault weapons protection without resort to the *Stenberg* principle of erring for the right-bearer. It is only in the context of the subjective SMUs (which are not essential to establish the claim) that the assault weapons claim might require *Stenberg* burden-shifting. And even on these subjective measures, the assault weapons argument is stronger than the *Stenberg* abortion claim.

Stenberg recites the deep divisions among experts about the utility of D&X.[276] Even though the American College of Obstetricians and

272. 530 U.S. at 937–38.

273. *Id.* at 936–37.

274. *Id.* at 937 ("[W]e cannot say that the presence of a different view by itself proves the contrary."). In the assault weapons context, there are analogies, but they cut against the state claim, either that assault weapons are a special enough threat that the state can impair the right in that limited case, or that assault weapons have no special utility in selected strands of self-defense.

275. *Id.* (emphasis added). Justice Breyer offers this as if the abortion procedures do not really present a problem. He really is saying that stepping on the constitutional right is more of a problem, and the primary one, and that we will err in favor of the individual and protect the optimal methodology, even where the state and many citizens find the procedure gruesome, even criminal.

276. *Id.*

Gynecologists' report "could identify no circumstances under which [D&X] would be the only option to save the life or preserve the health of the woman," the Court protected the procedure on the authority of other expert testimony.[277] There is nothing close to this type of dispute about the subjective SMUs of the assault weapon. Indeed, the assertion of special externalities, and thus special utility, is what prompts assault weapons regulation in the first place.[278] However, even where the state manages a plausible argument that assault weapons present more costs than benefits,[279] *Stenberg* resolves doubt in favor of the right-bearer.[280]

f. A Critique of Irrational Distinctions

Justice Breyer argues that the Nebraska statute does not really further the state's asserted interest in the "potentiality" of human life—that it is not geared to actually save any particular fetus from destruction because it only affects a rare method of abortion and abortion by other methods is freely available.[281] So the rationale for the partial-birth abortion ban is illusory because abortion is a broadly protected constitutional right that unquestionably could be exercised through alternative means. Indeed, Justice Breyer contends that the D&X ban is irrational because the statute makes it hard to distinguish between D&X and the ostensibly legal D&E procedure.[282] So even the interest in avoiding destruction of the fetus through a particularly troublesome methodology is not achieved. Justice Stevens's short concurrence puts the argument bluntly: the Nebraska statute is not rational because there is no reason to believe that the banned procedure is any "more brutal, more gruesome, or less respectful of 'potential life'" than the permitted procedure.[283]

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277. *Id.* at 934 (quoting Am. Coll. of Obstetricians & Gynecologists Executive Bd., Statement on Intact Dilation and Extraction (Jan. 12, 1997)).

278. *See generally* Part II.B (explaining the regulatory paradox).

279. This claim requires the difficult showing that a gun's features are not neutral—that somehow they are only accessible to criminals. The Brady Campaign to Prevent Gun Violence attempts this argument, suggesting that assault weapons have some special capacity for shooting from the hip—something criminals especially need to do. *See* BRADY CAMPAIGN TO PREVENT GUN VIOLENCE, *supra* note 82. David Hemenway makes a similar effort in a survey that questions whether owners of semiautomatic firearms exhibit peculiar personality traits. *See* Hemenway & Richardson, *supra* note 76, at 286. He found that 60% of gun owners had at least one automatic or semiautomatic firearm, and that those people reported more frequent binge drinking. *Id.* at 287.

280. *See* 530 U.S. at 937–38.

281. *Id.* at 930.

282. *Id.* at 938–39 ("We do not understand how one could distinguish, using [the statutory] language, between D&E . . . and D&X . . . .").

283. *Id.* at 946–47 (Stevens, J., concurring). *Compare id.* (describing as "irrational" the notion that the state furthers any legitimate interest by banning one abortion method but not the other), *with* Gonzales v. Carhart, 127 S. Ct. 1610, 1647 (2007) (Ginsburg, J., dissenting) ("The law saves not a single fetus from destruction, for it targets only a *method* of performing abortion."). These arguments parallel the broad claim that there is no distinction between the good guns and the bad guns in assault weapons legislation, and thus the distinctions based on appearance are irrational.

Here Justices Stevens and Breyer track almost exactly criticisms that I and others leveled at the 1994 ban. I argued that banning the AR-15 and exempting the visually-distinct but functionally-equivalent Mini-14 was incoherent—that distinctions elevating appearance over function were silly.[284] The assault weapons distinction is incoherent because multiple other guns remain available, all of them are similarly deadly, many of them are objectively more lethal than the assault weapon, and an entire category of explicitly constitutionally protected guns (handguns) account for the vast majority of gun crime.[285] Tracking Justice Stevens's *Stenberg* argument, how does a ban on semiautomatic guns with pistol grips and folding stocks serve the state interest in limiting firearms externalities when functionally identical and far more destructive guns are explicitly permitted in the same legislation and are otherwise constitutionally protected?

Ultimately we know that "assault weapon" is a political designation that breathed life into the waning handgun prohibition movement and was calculated to avoid the wrath of hunters by exempting millions of more-lethal semiautomatic "sporting" guns.[286] But this only makes the earlier point another way. Semiautomatic guns are and long have been a significant fraction of the inventory of civilian firearms.[287] Assault weapons, distinguished primarily by appearance,[288] are a functionally indistinct and irrational classification.

g. Attitudinalism and the Cringe Factor

All of the *Stenberg* opinions, particularly the dissents, labor over the particulars of the contested abortion procedures.[289] Justices Thomas and Kennedy both present the gruesome details almost as if the description alone should settle things.[290] If the dispute really comes down to this, the attitudinalist claim that passions trump principles is compelling.[291]

Justice Stevens also captures the essence of the armed self-defense decision in his summary of the personal right of the woman "to make this difficult and extremely personal decision." *Stenberg*, 530 U.S. at 946 (Stevens, J., concurring). The self-defense claim is stronger of course because the competing life interest is totally innocent in the abortion context and predominantly culpable in the self-defense context. Also, the gun case is stronger because it is death or severe bodily harm in the balance for the armed self-defender. In the abortion context, this is rarely the case. *See supra* notes 251–54 and accompanying text.

284. Johnson, *supra* note 65, at 442, 445.

285. *See* District of Columbia v. Heller, 128 S. Ct. 2783, 2855–56 (2008) (Breyer, J., dissenting).

286. *See supra* Parts I, II.A.2; *see also* Kopel, *supra* note 40, at 164–70 (comparing exempt recreational firearms and assault weapons).

287. *See supra* Part II.A.1.

288. *See, e.g.*, Kopel, *supra* note 40, at 171–74.

289. *See, e.g.*, Stenberg v. Carhart, 530 U.S. 914, 958–60 (2000) (Kennedy, J., dissenting).

290. *See id.* at 961 ("In light of the description of the D&X procedure, it should go without saying that Nebraska's ban on partial birth abortion furthers purposes States are entitled to pursue."); *id.* at 983–89 (Thomas, J., dissenting).

291. One obvious explanation for the split in *Stenberg* is that, compared to the majority, the

The *Stenberg* dissenters argue that even the technical, clinical description of the disputed procedure is grotesque.[292] Even Justice Breyer

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dissenters place a generally higher relative value on the fetus. Justice Kennedy, for example, emphasizes testimony that D&X in some renditions is a hair's breadth away from infanticide. *Id.* at 958–59 (Kennedy, J., dissenting). The life interest of the fetus is difficult to define. *Stenberg* discusses the state's interest in the "potentiality of human life." *Id.* at 930 (majority opinion). This reflects that the fetus is not a separate person, but is substantially more than nothing (some grieve over its loss). It is more than just the idea of a life that might emerge. Whatever label we apply to it, it has happened, it exists. But how far apart are these valuations and what else do they tell us? Only in context do we approach an answer. Compare, then, Justice Breyer's majority opinion in *Stenberg* and his dissent in *Heller*. Together they are a textbook illustration of the standard position and perhaps illuminate core convictions that attitudinalists say really control these questions.

One explanation for the standard position is the relative valuation of life-interests. Both the abortion right and the gun right threaten and ultimately consume competing life-interests: the gun right through criminal homicides and legitimate self-defense shootings; the abortion right through destroyed fetuses. One way to arrive at the standard position is to value the fetus as some fraction of a life-in-being. So 1.3 million fetuses destroyed each year are weighted less than 13,000 gun homicides. *See* Johnson, *supra* note 1, at 843; Alexi A. Wright & Ingrid T. Katz, Roe *versus Reality—Abortion and Women's Health*, 355 NEW ENG. J. MED. 1, 2 (2006). On that measure, the standard position values the fetus at about .01 of a life-in-being.

One might adopt the standard position on the view that the externalities of the gun right weigh more heavily than those of the abortion right. But this is empirically problematic. It rests on the highly contested assumption that firearms impose net social costs while the abortion right only causes opponents and participants some existential angst. It means ignoring evidence that guns are used widely for self-defense and that communities where trustworthy people are armed experience less crime. *See, e.g.*, JOHN R. LOTT JR., MORE GUNS, LESS CRIME: UNDERSTANDING CRIME AND GUN-CONTROL LAWS 51 (1998); Kleck & Gertz, *supra* note 192, at 185. And that requires erring against the right-claimant on a deeply contested empirical question—precisely the opposite of what *Stenberg* commands. *See supra* Part III.B.1.e.

Another explanation is that the costs of the abortion right are private and predictable, while the externalities of the gun right spin out at random. But this really collapses back into the fetus valuation question. If we were balancing a life-in-being rather than a fetus, it would not be a privacy issue at all. It would be just like the gun question, where it is no excuse that gun violence occurs in private or between family members. The only difference in the abortion case is that the fetus depends on the mother in a unique way, and in a contest between the two, that dependency lowers the valuation of the fetus.

There is another superficially different explanation that, again, reduces to the valuation question. It emphasizes the mother's autonomy and equality in a world where men and women are both responsible for the pregnancy but women disproportionately bear the burden of caring for the unwanted child. *See* Ginsburg, *supra* note 204, at 382–83. This transforms the question into a contest between the man and woman who created the fetus. Equality means that the woman should have an equivalent chance to avoid the burden of the unwanted child. It is interesting to compare this argument with the militia-centric version of the Second Amendment that is advanced, for example, by Justice Stevens's dissent in *Heller*. *See* District of Columbia v. Heller, 128 S. Ct. 2783, 2824–26 (2008) (Stevens, J., dissenting). Formal militia participation historically has been, and continues to be, explicitly gender-discriminatory. *See, e.g.*, 10 U.S.C. § 311 (2006) (identifying militia members as able bodied males ages eighteen to forty-five, and female members of the national guard). This seems to be an equal or plainer violation of the equality argument. This reduces to the valuation argument because any value attached to the fetus is secondary to the woman's equality claim.

It is then difficult to escape the assessment that the standard position depends on a comparatively low valuation of the fetus. Is it principle or passion that explains this valuation?

292. *See, e.g.*, 530 U.S. at 983–89 (2000) (Thomas, J., dissenting).

acknowledges, "our discussion may seem . . . horrifying."[293] The details of the assault weapon ballistics argument will strike some people the same way. Consider, for example, Dr. Martin Fackler's illustration of the comparatively less lethal characteristics of the assault weapon projectile: "[Assertions that assault weapon bullets are especially destructive] must cause the thinking individual to ask: . . . how is it possible that twenty-nine children and one teacher out of thirty-five hit in the Stockton schoolyard survived . . . ?"[294] Dr. Fackler's point is that assault weapons fire an intermediate round "designed to limit tissue disruption—to wound rather than kill."[295] One response is that this large number of people would not have been shot but for the assault weapon. The rebuttal unfortunately is that the unilaterally armed assailant is at no practical disadvantage for having to top off or reload any of the other common firearms technologies.[296] Defenseless people are no better off whether their assailant is using a continuously reloadable shotgun, 100-year-old lever-action rifle, or a revolver that takes seconds to reload.[297] The broader point is that some may find this whole conversation as repulsive as others find Justices Breyer's and Stevens's arguments that D&X and D&E are so similarly grotesque that the state cannot rationally discriminate between the two.[298] One wonders whether principles, constitutional or otherwise, can compete with the passions stirred by questions.

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293. *Id.* at 923 (majority opinion).

294. *See* Kopel, *supra* note 40, at 169–70 (alteration in original).

295. *Id.* at 170.

296. In 1997, at Pearl High School in Pearl, Mississippi, a sixteen-year-old shot nine classmates using a stolen single-shot deer rifle that "had to be reloaded after every shot." Wayne Laugesen, *A Principal and His Gun*, BOULDER WKLY., Oct. 15, 1999, *available at* http://www.davekopel.com/2a/othwr/principal&gun.htm.

297. Some of the worst outcomes of human violence are the result of extreme imbalances in access to weapons technology. *See, e.g.*, JARED DIAMOND, GUNS, GERMS, AND STEEL: THE FATES OF HUMAN SOCIETIES 76 (1999) (describing massacres of native peoples by European invaders with guns). *See generally* JAY SIMKIN ET AL., LETHAL LAWS (1994) (arguing that government-imposed gun control has resulted in genocides). Smaller-scale examples are shootings like the Virginia Tech massacre. *See* Christine Hauser & Anahad O'Connor, *Virginia Tech Shooting Leaves 33 Dead*, N.Y. TIMES, Apr. 16, 2007, *available at* http://www.nytimes.com/2007/04/16/us/16cnd-shooting.html?_r=1&scp=1&sq=virginia%20tech%20massacre&st=cse.

298. I have long held the view that people react viscerally to the gun question and rarely change their position absent some cathartic event. I have viewed this mainly as a cultural phenomenon. The work of cognitive psychologists tracking the seats of different capabilities and emotions in the brain suggests another possibility—that it might be hard-wiring as much as culture that guides how we approach the gun question. Particularly interesting is the recognition that in our "reptile brain," the cerebellum controls more basic and automatic functions. See generally DANIEL J. LEVITIN, THIS IS YOUR BRAIN ON MUSIC: THE SCIENCE OF A HUMAN OBSESSION (2007), for a fascinating study of these general ideas. Could it be that the revulsion and fear that people experience viewing just a picture of a firearm keys into some hard-wired survival instinct? Or that the fascination others have with firearms reflects a different version of the same thing? Perhaps thinking about private weapons is a largely hard-wired response to perceived danger. *See id.*

2. *The* Stenberg *Dissents*

There are, of course, distinctions between the ideas that ground abortion and gun rights, but mainly those distinctions show that the abortion right is on more tenuous footing.[299] This subsection elaborates those distinctions by reference to the dissenters' criticisms of the *Stenberg* majority.

a. Kennedy in Dissent

i. Government's Countervailing Interest: Promoting Respect for Human Life and the Impulse for Irrational Assault Weapon Definitions

Justice Kennedy argues that the majority fails to respect *Planned Parenthood of Southeastern Pennsylvania v. Casey*, in which the Court validated the state's substantial countervailing interest in "promot[ing] the life of the unborn and . . . ensur[ing] respect for all human life and its potential"[300] and combating things that cause society to become "insensitive, even disdainful, to life."[301] Justice Kennedy's lament comes closer to capturing the impulse for assault weapons bans than anything offered in legislative preambles.[302]

Although assault weapon classifications make little sense functionally, they do successfully stigmatize fighting tools. This explains the typical exemptions for functionally identical guns (just as effective for fighting) that by appearance seem more like sporting tools. I have criticized this elevation of appearance over function as silly, but Justice Kennedy's "insensitivity to life" theme evokes a symbolism that renders assault weapon distinctions entirely understandable. A seminar student several years ago gave voice to it. In a deeply emotional reaction to a discussion of the irrational classifications in the 1994 ban, she said she did

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299. *See* Johnson, *supra* note 12.

300. Stenberg v. Carhart, 530 U.S. 914, 957 (2000) (Kennedy, J., dissenting).

301. *Id.* at 961.

302. It is almost too easy to criticize assault weapons bans for the absurd focus on pistol grips, bayonet lugs, and flash hiders that are irrelevant to function. Representative Carolyn McCarthy, sponsor of a House bill to renew the 1994 ban, was embarrassed on national television when asked by Tucker Carlson to explain what a barrel shroud was and why her bill proposed to ban them. *See Tucker* (MSNBC television broadcast Apr. 18, 2007), *available at* http://www.youtube.com/watch?v=ospNRk2uM3U. Pressed, she admitted that she did not know what a barrel shroud was: her guess was the sling or carrying strap. *Id.* Representative McCarthy ran for Congress after losing a loved one to the gunfire of a madman who shot people randomly on a Long Island Railroad train. Peter Marks, *Train Shooting Victim Speaks for First Time Since Injury*, N.Y. TIMES, Dec. 15, 1993, *available at* http://www.nytimes.com/1993/12/15/nyregion/train-shooting-victim-speaks-for-first-time-sinceinjury.html.

Almost any reaction to that kind of trauma is understandable. But it is not just Representative McCarthy who presses the view that oddly-defined assault weapons are illegitimate. *See, e.g.*, Press Release, Violence Policy Ctr., U.S. Can Act Immediately to Halt Import of AK-47 Assault Rifles Fueling Gun Violence on U.S./Mexico Border, VPC Tells Congress (Mar. 18, 2009), *available at* http://www.vpc.org/press/0903rand.htm.

not want to be part of a society in which people owned assault weapons. It was irrelevant to her that two guns would kill the same way, that they were identical in function. It was *vital* to her that one gun by its appearance seemed clearly "intended" only for fighting! There was something wrong with a society that allowed such things and something wrong with people who owned them. Her essential anguish tracked Justice Kennedy's criticism. The appearance of the guns suggests we are insensitive to the value of life. Ignoring the root political calculations, this is the purest form of the impulse for assault weapons restrictions.

The answer to this is straightforward. Post-*Heller*, firearms for self-defense against criminal attackers are at the core of the Second Amendment right.[303] The sporting-use designation, a key feature of federal importation rules[304] that seeped into general questions of firearms legitimacy, is now just a vestige of the pre-*Heller* world. So while the impulse to ban assault weapons is understandably rooted in the symbolism of the sporting-use designation, *Heller*'s protection of ordinary self-defense guns nullifies the sporting use filter and places self-defense utility at the center of the constitutional inquiry.[305]

Justice Kennedy argues that the state has an interest in declaring critical moral differences between the permitted D&E and the restricted D&X procedures.[306] The state, he says, need not be indifferent to a procedure that uses the natural delivery process to kill the fetus.[307] This is a fair analogue to the argument that the state has an interest in preventing citizens from defending themselves with guns that look like weapons of war, and that "silly"[308] distinctions based on appearance actually reflect important *moral judgments*.

One answer is that the distinctions used to classify some semiautomatic guns as assault weapons are hardly perceptible and others are nebulous. For example, one of the things necessary to make a prohibited gun legal under the 1994 ban was swapping internal parts like the foreign-trigger group for domestic ones.[309] And for some people just the color and constituent materials of the gun (black and synthetic versus

303. *See* District of Columbia v. Heller, 128 S. Ct. 2783, 2821–22 (2008).

304. *See* 18 U.S.C. § 922(r) (2006).

305. The 1994 ban was grounded partly in the pre-*Heller* focus on "sporting use" to define legitimacy. *See* Johnson, *supra* note 106, at 771–72. Post-*Heller*, with its explicit protection of arms ordinarily used for self-defense, the sporting-use designation recedes to the margins.

306. *Stenberg*, 530 U.S. at 964 (Kennedy, J., dissenting).

307. *Id.*

308. *See* Johnson, *supra* note 65, at 445.

309. Domestic parts were manufactured for precisely this purpose. *See* Brownells.com, AK-47 Trigger Group, http://www.brownells.com/.aspx/pid=22875/Product/ (last visited June 10, 2009) ("Drop-in replacement for factory trigger . . . . Made in the U.S.A. to keep your gun in compliance with U.S. Code Title 18 Section 922(r) part-source requirements. Kit counts as three, U.S.-made parts—trigger, disconnector, and hammer. Single and double hook models available.").

wood and blued steel) may be the difference between sporting and menacing.[310] More broadly, in the context of the full inventory of common firearms, the moral distinction is unsustainable. Is it plausible that guns easily secreted on the person (i.e., handguns, all of which have pistol grips) are morally superior to rifles with pistol grips? Are high-powered rifles that can produce sure kills on human targets at hundreds of yards (essentially every deer rifle ever made) morally superior to lower-powered carbines with adjustable stocks (e.g., the AR-15)? Why are semiautomatic repeaters in intermediate calibers reprehensible but high-caliber semiautomatic, pump-, or lever-action hunting guns, and multi-projectile shotguns morally benign?

My emotional student's revulsion against the assault weapon is a tenuous platform for building policy. But if assault weapons bans are to be sustained, it is something like that revulsion that must be elevated to a countervailing state interest. Compared to the state interest in the partial-birth abortion case—restricting a procedure that borders on infanticide—it seems quite trivial.

ii. Private Judgments and Public Morality

Justice Kennedy contends that the judgment of the doctor about the necessity of D&X to preserve life or health of the mother puts a public judgment into private hands—that "it is now Dr. Leroy Carhart who sets abortion policy for the State of Nebraska, not the legislature or the people."[311] On a question steeped in "morality," Justice Kennedy says it is wrong to make this an individual subjective decision.[312]

Contrast the assault weapons case where the mere assertion by the right-bearer that a particular technology is better for him (the equivalent of Justice Kennedy's complaint about Dr. Carhart) is only secondary evidence of SMU. For assault weapons, the primary claim of SMU is objective, based on distinctions in ballistics, recoil, and rate of fire that are mechanical, repeatable, and precisely measurable.

iii. Rights on the Border of Legitimacy and the State Interest at Its Peak

Justice Kennedy emphasizes that the disputed D&X procedure is effective only when the fetus is nearly or actually viable, a point where the state's interest in fetal life is nearing its peak and the woman's claim is weakest.[313] He emphasizes Dr. Carhart's admission that he performs

310. *See* Alex Roth et al., *New Calls for Assault-Gun Ban*, WALL ST. J., Mar. 13, 2009, http://online.wsj.com/article/SB123690314709013801.html (recounting the label "black guns" applied to assault weapons).

311. *Stenberg*, 530 U.S. at 965 (Kennedy, J., dissenting).

312. *Id.* at 964–65.

313. *See id.* at 968.

D&X abortions even "when he is unsure whether the fetus is viable"[314] and argues that dispatching the viable fetus through the prohibited D&X procedure borders on infanticide because the abortion proceeds essentially as a live birth until the fetus is destroyed.[315] He argues essentially that D&X is categorically different from other abortion procedures.

The assault weapons question avoids this criticism. There is no comparable argument that the assault weapon user is any different from someone who has used a handgun or other unquestionably constitutionally-protected gun in self-defense. It is the *circumstances*, not the gun type, that determine whether the self-defense claim is legitimate. On this measure, the assault weapons claim is stronger. D&X, and arguably even the less controversial D&E procedure, produces a qualitatively distinct type of destruction because the fetus has grown to look more human, is perhaps viable outside the womb, and is destroyed in a fashion where analogies like drawing and quartering seem fair.

A different argument is that the assault weapon in criminal hands generates externalities qualitatively different from other guns in the civilian inventory. The utility discussion above shows that while every type of gun has its SMUs, the utility that imposes the highest externalities is the concealability of handguns.[316] Moreover, most assault weapons are less lethal than deer rifles, and their multishot capability is exceeded by the ubiquitous shotgun.[317] The complaint about their appearance reflects an uneasiness about making self-defense against fellow citizens a central component of public policy. But now that *Heller* has done just that, the objection to "nonsporting," overtly self-defensive guns is unsustainable.

iv. Incorporating Substantial Countervailing Interests

Justice Kennedy argues that *Stenberg* violates *Casey* by establishing a right to partial-birth abortion without any interference from the state.[318] People will debate this construction, but it highlights an important point. *Casey* acknowledged the substantial state interest in potential life throughout pregnancy, declaring that "not all regulations must be deemed unwarranted."[319]

This prompts an instructive comparison with *Heller*, which broadly affirms the state's interest in regulating firearms externalities. *Heller* says

314. *Id.* at 958.

315. *Id.* at 959–60.

316. District of Columbia v. Heller, 128 S. Ct. 2387, 2856–57 (Breyer, J., dissenting).

317. *See* Kopel, *supra* note 40, at 164–67.

318. *See Stenberg*, 530 U.S. at 960–61 (Kennedy, J., dissenting); *see also id.* at 1012 (Thomas, J., dissenting) (levying essentially the same criticism that by ceding authority to the physician to apply the health exception, the majority mandates "unfettered abortion on demand").

319. Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 876 (1992) (plurality opinion).

that most existing gun-control regulations remain valid, that laws restricting access by felons and minors are not suspect, and that functionally distinct guns like machine guns might not be protected.[320] That the Court has limited Second Amendment protection to guns in common use for lawful purposes like self-defense by definition denies citizens access to substantially all of the military arsenal.[321] In this sense *Heller* already endorses a broader range of government regulation than *Stenberg* would tolerate in the abortion context. Under the logic of *Stenberg*, essentially *every* type of abortion procedure is guaranteed if deemed necessary to save the mother's life.[322] *Heller*, on the other hand, declares that only a narrow range of common firearms are guaranteed under the Second Amendment, and that many people by their behavior or their status can be denied even those.[323]

v. De Minimis Special Marginal Utilities

Justice Kennedy contends that the majority is "wrong to limit its inquiry to the relative physical safety of the two procedures, with the slightest potential difference requiring the invalidation of the law."[324] The majority is straightforward about this. Alternatives to the D&X procedure were found by the district court actually to be safe and adequate, respecting at a reasonable level the woman's interest in having a safe procedure.[325] However, the prevailing argument was that the prohibited procedure was *safer* than other safe ones.[326] Women are entitled to the better methodology, even where that means destruction of the entirely innocent postviability fetus through a very problematic methodology.[327]

The argument that the special utilities of assault weapons can be adequately replaced by other constitutionally protected firearms is essentially the same. *Stenberg* principles dictate that the state may not ban assault weapons on the argument that alternate firearms exist, so long as the assault weapon provides an advantage. On this point as well, the assault weapons claim is comparatively stronger. There is substantial dispute about the special utility of the D&X procedure, with competing views plagued by subjective judgments.[328] The assault weapons case, in contrast, turns on verifiable physical characteristics already discussed.

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320. 128 S. Ct. at 2816–17.

321. *Id.* at 2817.

322. *See Stenberg*, 530 U.S. at 961 (Kennedy, J., dissenting).

323. 128 S. Ct. at 2816–17.

324. *Stenberg*, 530 U.S. at 967 (Kennedy, J., dissenting). Justice Thomas similarly argues that the *Stenberg* health exception for procedures that have "any comparative health benefits" demands too little. *Id.* at 1012 (Thomas, J., dissenting).

325. *Id.* at 914, 915 (majority opinion).

326. *Id.* at 928–29.

327. *See id.*

328. *Id.* at 926–29.

vi. Letting the State Take Sides in Utility Disputes

Justice Kennedy criticizes the majority for ignoring precedent that in other contexts permitted states to take sides on disputed medical questions.[329] In the assault weapons case, this principle would demand a detailed evaluation and deference to the state where there is fair disagreement about assault weapons' externalities. The showing would focus on the objective evidence of functionality. Faked photo-ops and wild assertions about super-destructive assault weapon bullets would diminish the state's position.[330] And here, the interesting question is whether Justice Kennedy would defer to credible state findings that assault weapons impose important net externalities. Unwillingness to defer would expose him to the attitudinalist critique.

b. Thomas in Dissent

i. Highlighting the Partial-Birth Abortion/Assault Weapon Intersection

Justice Thomas argues that the *Stenberg* majority goes beyond what is required to protect the mother's health.[331] He contends that the majority fails "to distinguish between cases in which health concerns require a woman to obtain an abortion and cases in which health concerns cause a woman who desires an abortion (for whatever reason) to prefer one method over another."[332]

This highlights the space where the abortion and gun claims intersect and is another illustration of their relative strength. The *Stenberg* abortion right is strongest—near absolute—where necessary to preserve the life or health of the mother. The mother is never required to surrender her life to the state's interest in the life of the fetus.[333] This is pure *abortion as self-defense* claim in the style of Judith Thomson and Donald Regan.[334] But this self-defense analogy only covers the small fraction of abortion claims where the mother's life is at stake. In contrast, essentially every gun claim to the better methodology for self-defense invokes the principle (controlling in *Stenberg*) that the state cannot trump the right-bearer's interest in preserving her own life. So over a far broader range of cases, the gun claim is covered by the strongest rendition of *Stenberg*'s protection of methodological alternatives.[335]

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329. *Id.* at 971–72 (Kennedy, J., dissenting).

330. Johnson, *supra* note 106, at 792 n.427.

331. 530 U.S. at 1010 (Thomas, J., dissenting).

332. *Id.*

333. *See supra* Part III.A.

334. *See supra* Part III.A; *see also* Johnson, *supra* note 196, at 102–15 (critiquing the positions advanced by Regan and Thomson).

335. *Compare Stenberg*, 530 U.S. at 980 (Thomas, J., dissenting) (making several other discrete points that highlight the intersection, by summarizing the basic case that the abortion right is not supported in the text of the Constitution), *with* Johnson, *supra* note 12, at 138–60 (weighing the textual

ii. Tolerating Infringements at the Margin

Justice Thomas's criticism that the majority has overridden important state interests to protect a marginal, even reprehensible, abortion methodology highlights another important distinction that makes assault weapons a stronger case under *Stenberg* principles than partial-birth abortion.[336] His first point is that this is not like *Planned Parenthood of Central Missouri v. Danforth*, which outlawed a procedure used in 70% of abortions after twelve weeks.[337] His view of the Court's abortion decisions is that banning a widely used methodology is problematic, but infringements at the margin can be tolerated.[338]

The gun parallel is evident. Under Justice Thomas's view, it would be problematic to ban handguns because they are so widely used for self-defense.[339] The assault weapon, in contrast, is like the more rarely used abortion methodologies. In principle, then, Justice Thomas's willingness to tolerate infringements at the margin—on the view that the core right is intact—should predict his response to an assault weapons ban. Is he trapped by inconsistency if he votes to strike down an assault weapons ban and rejects the argument that adequate alternative guns are available?

The answer is in the details of his *Stenberg* dissent. Thomas invokes *Danforth* to press the point that D&X is *not only* rarely used (it is only considered in 5.5% of abortions that occur after fifteen weeks, the vast majority of which are performed using the D&E alternative),[340] but that "[a] select committee of [the American College of Obstetricians and Gynecologists] 'could identify no circumstances under which this procedure . . . would be the only option.'"[341] So, unlike the majority, Justice Thomas concludes from the empirical debate that there is "no basis upon which to state the claim that [partial-birth abortion] is a safer or even a preferred procedure."[342] In his view, the SMUs of D&X is zero, and its externalities (flirting with infanticide) are off the scale.[343] In

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claims for the abortion and gun rights), *and* Johnson, *supra* note 74, at 709–11 (showing the right to arms in 44 state constitutions). For Justice Thomas' discussion of the "partial-birth abortion" term that tracks the criticisms that the legislature created the term "assault rifle" and the category in conflict with conventional meaning, see *Stenberg*, 530 U.S. at 1014 (Thomas, J., dissenting). His summary of *Casey*, which he claims is undercut by *Stenberg*, includes a description of *Casey*'s validation of a twenty-four-hour waiting period. *Id.* This is a style of legislative proposal common in both the gun and abortion context. *See* Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 879–80 (1992) (describing exception to the waiting period where the life or health of the mother was at stake).

336. *Stenberg*, 530 U.S. at 1014 (Thomas, J., dissenting).

337. *See* 428 U.S. 52, 75–76 (1976).

338. *Stenberg*, 530 U.S. at 1014 (Thomas, J., dissenting).

339. *See, e.g.*, Kleck, *supra* note 192, at 185.

340. *Stenberg*, 530 U.S. at 1015 (Thomas, J., dissenting).

341. *Id.*

342. *Id.* at 1016.

343. *Id.* at 1020.

contrast, the assault weapon claim presents strong objective evidence of SMU. His answer, then, to the attitudinalist critique would be that there is a broad empirical disanalogy favoring the assault weapons claim and disfavoring partial-birth abortion. Even though they reside in similarly contested space, on this point the greater SMUs of the assault weapon makes the two claims very different cases.[344]

3. Gonzales v. Carhart*: Reflecting Back the Standard Position?*

In 2007, Court conservatives upheld a federal partial-birth abortion ban that distinguished and diminished *Stenberg*.[345] In *Gonzales v. Carhart*, the Court credited congressional findings that "intact D&E" (i.e., D&X) is *never* the better methodology for preserving the life or health of the mother.[346] *Gonzales* exposes the conservative wing of the Court to the attitudinalist critique. It reflects one leg of what I will call the "common view" of conservatives (i.e., support for gun rights and disparagement of abortion rights). While *Heller* nominally reflects the other leg, the better and more instructive test of the attitudinalist proposition would be an assault weapons case invoking the *Stenberg* principles that conservatives opposed.[347] However, that case still would not be as open and telling a test of conservative attitudinalism as *Stenberg* is for Court liberals.

The reason is in the distinction that has been evident throughout this critique. *Gonzales* underscores the conclusion that the common view faces a far lighter burden of principle than the standard position. This is a function of the factual distinctions between the partial-birth abortion and assault weapons claims. Those distinctions are illustrated broadly by my original assessment in *Principles and Passions*,[348] and more particularly here. The discussion below will elaborate the relative burdens of the standard position and the common view by emphasizing elements of the assault weapons claim that make the common view easier to sustain as a matter of principle.[349]

344. Kopel, *supra* note 38. The assault weapon presents SMUs in terms of ballistics and recoil that can be measured to decimal places. *See supra* Part II. The assault weapon's lower lethality actually complements the state interest in reducing externalities. *See supra* Part II. The significance of this reduced lethality (and the arguable irrationality of a restriction that fails to account for it) should be understood in contrast to the advanced lethality of guns expressly identified as legitimate (e.g., most medium to large game hunting rifles in a variety of repeating technologies). *See supra* Part II.

345. *See* Gonzales v. Carhart, 127 S. Ct. 1610, 1619 (2007).

346. *Id.* at 1644.

347. *See supra* Part III.B.2.a–b (discussing dissents of Justices Kennedy and Thomas, criticizing the adequacy of a peppercorn of SMUs and protection of methodologies rarely necessary to protect life or health).

348. Johnson, *supra* note 12.

349. I do not claim that this would satisfy the attidudinalist who might always dismiss articulated principles as just byplay or "worse than useless" bunk. *See* Dorf, *supra* note 22, at 500.

a. Partial-Birth Abortion as a Transformative Methodology

Writing for the majority, Justice Kennedy suggests partial-birth abortion is an appropriate object of legislative attention because it is a qualitatively different, indeed transformative, methodology.[350] The D&X procedure is distinct even from D&E because the relative similarity of D&X to the actual birth process *transforms* it from a legitimate abortion procedure into something just short of assault on a human child.

Nothing about the assault weapon, or using assault weapons for self-defense, is similarly transformative. The assault weapon is a gun, like other guns. It is deadly, like other guns. But it is demonstrably not the most dangerous gun in the inventory of common firearms.[351] It does not impact targets in a different, somehow more reprehensible way. Legitimate acts of self-defense are not rendered illegitimate because the defender uses an AR-15 instead of a handgun. So unlike partial-birth abortion, on this test of legitimacy, the assault weapon survives.

b. Disputed Utility and Legislative Discretion

Integral to the outcome in *Gonzales* is the majority's willingness to credit the legislature's judgment that there is overriding evidence of disutility: the contested statute was grounded on a congressional finding that partial-birth abortion is *never* the best methodology for preservation of the life or health of the mother.[352] Justice Kennedy dissented in *Stenberg* that legislatures should be permitted to take sides in this fashion.[353] *Gonzales* enforces that view. Acknowledging the dispute about the utility of D&X, the majority finds the case close enough to defer to Congress:[354]

> There is documented medical disagreement whether the Act's prohibition would ever impose significant health risks on women. . . .
>
> The question becomes whether the Act can stand when this medical uncertainty persists. The Court's precedents instruct that the Act can survive this facial attack. The Court has given state and federal

350. *See Gonzales*, 127 S. Ct. at 1634–35 ("Partial-birth abortion, as defined by the Act, differs from a standard D&E because the former occurs when the fetus is partially outside the mother to the point of one of the Act's anatomical landmarks."); *see also* Stenberg v. Carhart, 530 U.S. 914, 1006–07 (2000) (Thomas, J., dissenting) ("The [American Medical Association] has recognized that this procedure is 'ethically different from other destructive abortion techniques because the fetus, normally twenty weeks or longer in gestation, is killed outside the womb. The "partial birth" gives the fetus an autonomy which separates it from the right of the woman to choose treatments for her own body.'" (quoting Brief for Ass'n of American Physicians & Surgeons et al., *supra* note 235)).

351. *See* Kopel, *supra* note 40, at 164–67.

352. 127 S. Ct. at 1624.

353. *See* 530 U.S. at 971–72 (Kennedy, J., dissenting).

354. *Gonzales*, 127 S. Ct. at 1637 ("On the one hand, the Attorney General urges us to uphold the Act on the basis of the congressional findings alone. Although we review congressional fact-finding under a deferential standard, we do not in the circumstances here place dispositive weight on Congress' findings. The Court retains an independent constitutional duty to review factual findings where constitutional rights are at stake." (citation omitted)).

> legislatures wide discretion to pass legislation in areas where there is medical and scientific uncertainty. . . .
>
> . . . .
>
> Medical uncertainty does not foreclose the exercise of legislative power in the abortion context any more than it does in other contexts. . . .
>
> The conclusion that the Act does not impose an undue burden is supported by other considerations. Alternatives [for example, D&E] are available to the prohibited procedure. . . .
>
> . . . .
>
> . . . Considerations of marginal safety, including the balance of risks, are within the legislative competence when the regulation is rational and in pursuit of legitimate ends.[355]

The Court does not entirely credit the congressional assessment.[356] But it does find the state interest sufficient to trump the essentially de minimis assertions of partial-birth abortion special utility.[357] This explicitly undercuts *Stenberg* and, more importantly for our purposes, exposes the *Gonzales* majority[358] to the attitudinalist critique. So would the *Gonzales* majority defer to legislative findings that assault weapons have no SMUs or are never the better self-defense option? If not, would they simply be indulging the common view of the right? Or can such a decision be justified as a matter of principle? This dilemma is structurally parallel to that afflicting Court liberals, but quantitatively it is quite different.

First, the deference in *Gonzales* is in the context of doctors' subjective preferences for competing medical procedures.[359] In contrast, the assault weapons question is more plainly a matter of measurable physical differences. In terms of functional utility, there is far less room to establish a parallel empirical disagreement about the assault weapon. For example, the core measurable utility of intermediate ballistics is indisputable.[360]

Still, the emphasis on the wide discretion the Court has permitted legislatures on questions of disputed medical utility[361] poses for the *Gonzales* majority a threshold burden of principle in the assessment of subsequent assault weapons bans. Justices who in *Gonzales* endorsed

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355. *Id.* at 1636–38 (citations omitted).

356. *Id.* at 1637–38.

357. *Id.* at 1638–39.

358. The *Gonzales* majority was made up of the same five Justices who voted in the *Heller* majority.

359. *See supra* Part III.B.2.b (noting that the entire utility is grounded in conflicting testimony by medical experts about the usefulness of D&X to the abortion doctor).

360. *See, e.g.*, Kopel, *supra* note 40, at 168–69.

361. *See Gonzales*, 127 S. Ct. at 1636.

deference to the legislature on disputed medical questions must take pains to show that the assault weapons claim is not exposed to the same type of subjective empirical dispute—that assault weapon SMUs are objectively measurable and that distinct assault weapons features will operate both as SMUs or externalities purely depending on the user.[362] These distinctions are more than plausible but present a difference of degree, not substance. Committed attitudinalists still might say it is all just a smokescreen for conservatives advancing the common view.

c. Dominant Methodologies and Methodological Alternatives

Like *Stenberg*, *Gonzales* affirms that a broad ban on dominant methodologies for exercising the protected right would be unconstitutional.[363] But unlike *Stenberg*, *Gonzales* permits limitations on rarely-used methodologies where good alternatives are available.[364] Extending that principle to the gun case, a sweeping handgun ban should be treated the same as a sweeping early-term-abortion ban. Both statutes should be struck down because they prohibit the dominant methodology for exercising the protected right. The assault weapon, however, is like the D&X procedure under *Gonzales*—a less common methodology that has substitutes—with an important difference. For some people, the light recoil from the intermediate cartridge makes the assault weapon always the best self-defense tool.[365] This showing would remove the "available alternatives" element that justified the infringement on marginal

362. *See supra* note 138 and accompanying text (discussing the regulatory paradox).

363. *See Gonzales*, 127 S. Ct. at 1637.

364. *Id.*

> The instant cases, then, are different from *Planned Parenthood of Central Mo. v. Danforth*, in which the Court invalidated a ban on saline amniocentesis, the then-dominant second-trimester abortion method. The Court found the ban in *Danforth* to be "an unreasonable or arbitrary regulation designed to inhibit, and having the effect of inhibiting, the vast majority of abortions after the first 12 weeks." Here the Act allows, among other means, a commonly used and generally accepted method, so it does not construct a substantial obstacle to the abortion right.

Id. (citation omitted) (quoting Planned Parenthood of Cent. Mo. v. Danforth, 428 U.S. 52, 79 (1976)).

365. David Kopel puts the point in human terms:

> One evening, a gang brawl broke out in the street next to the northwest Denver home of a young woman named Sharon Deatherage. A police car happened upon the scene, and sped away without taking any action, never to return. As a result of this experience, the young woman, who lived alone, decided that she would have to take measures to protect herself because she could not rely on the Denver City government for protection. Because of an injury to her wrist, she was unable to use a handgun. At the suggestion of a firearms instructor, she bought an M-1 carbine, which is a relatively small, low-powered semiautomatic rifle, and which has been commercially available for nearly half a century. Not long after she bought the weapon, the City of Denver turned Ms. Deatherage into a criminal by declaring her M-1 carbine and its attached 30-round ammunition magazine an illegal "assault weapon."

Kopel, *supra* note 38, at 381 (footnote omitted). As the example illustrates, someone who wants a gun for self-defense but is physically unable to use a handgun must choose another suitable gun. The M-1 carbine assault rifle is perhaps the lowest-recoiling gun firing a cartridge still suitable for self-defense, making it and other low-recoil assault weapons the best available option for self-defense. *Id.*

methodologies in *Gonzales*.[366] It also would provide cover to the conservative wing of the Court in a subsequent assault weapons case that had to explain why infringement on marginal methodologies was acceptable in the abortion context (*Gonzales*) but not in the gun case. As legal distinctions go, it seems fair. Whether it would satisfy the committed attitudinalist is a tougher question.

d. Rejecting Physicians' Subjective Valuations

Justice Kennedy dissented in *Stenberg* that the majority turned individual doctors into arbiters of community morality.[367] *Gonzales* gives that objection constitutional effect: "The law need not give abortion doctors unfettered choice in the course of their medical practice, nor should it elevate their status above other physicians in the medical community."[368] Furthermore, "[w]hen standard medical options are available, mere convenience does not suffice to displace them; and if some procedures have different risks than others, it does not follow that the State is altogether barred from imposing reasonable regulations."[369] So the preferences of individual doctors will not be dispositive on the question of methodological utility.

The assault weapons comparison yields two separate points. Throughout the discussion of *Stenberg*, I have emphasized that assertions of partial-birth abortion utility were primarily subjective (grounded in the surgical preferences of particular doctors) while the primary SMUs of the assault weapon were objectively measurable.[370] However, as discussed above, the assault weapon presents a variety of "subjective" SMUs as well.[371] Conceivably, one or more of those factors might be central to a particular aspect of a future assault weapons dispute. In a case like that, Justice Kennedy's treatment of subjective SMU claims would invite an attitudinalist challenge.

e. Disputed Utility and Facial Attacks

Justice Kennedy explains that the questionable utility of partial-birth abortion, supplemented by the congressional finding that it is never the best alternative, makes the statute particularly unsuited to facial attack.[372] The problem is better suited to an as-applied challenge:

> The Act is not invalid on its face where there is uncertainty over whether the barred procedure is ever necessary to preserve a woman's health, given the availability of other abortion procedures that are considered to be safe alternatives.

366. 127 S. Ct. at 1636.
367. *See* 530 U.S. 914, 964 (2000) (Kennedy, J., dissenting).
368. 127 S. Ct. at 1636.
369. *Id.* at 1638.
370. *See* discussion *supra* Part II.B.1.
371. *See* discussion *supra* Part II.B.2.
372. *Gonzales*, 127 S. Ct. at 1624, 1636.

> The considerations we have discussed support our further determination that these facial attacks should not have been entertained in the first instance. In these circumstances the proper means to consider exceptions is by as-applied challenge.[373]

This view imposes a substantial burden of principle on Court conservatives. It is not at all clear that the quantitative differences between the partial-birth abortion and assault weapons claims dictate a different outcome on the facial challenge question. So a subsequent facial attack on assault weapons legislation would be telling. Justice Kennedy's suggestion that an as-applied challenge gives the Court a better opportunity to quantify and balance utility and risk is easily applicable to the assault weapons question. But broadly speaking this is always the case. So there still is room to answer that the facial challenge comparison really is not close, as shown by comparing the respective claims of special utility.[374]

Evaluation of assault weapons under the abortion standard for facial challenges is complicated by the Court's failure to articulate a precise standard. The *Gonzales* majority explains, "What [the facial challenge] burden consists of in the specific context of abortion statutes has been a subject of some question. We need not resolve that debate."[375] Justice Kennedy acknowledges two possible views: that a facial challenge to an abortion statute "must show that no set of circumstances exists under which the Act would be valid,"[376] or that the legislation would be "unconstitutional in a large fraction of relevant cases."[377]

So a facial challenge in the equivalent assault weapons case might require a showing that no set of circumstances exists under which the ban would be valid. This is an extremely demanding standard that, taken literally, seems to credit almost any scenario the government can articulate. So even though assault weapons claimants might make powerful arguments that a facial challenge to an assault weapons ban is a far stronger case, a facial challenge sustained by conservatives still would

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373. *Id.* at 1638.

> The Government has acknowledged that preenforcement, as-applied challenges to the Act can be maintained. This is the proper manner to protect the health of the woman if it can be shown that in discrete and well-defined instances a particular condition has or is likely to occur in which the procedure prohibited by the Act must be used. In an as-applied challenge the nature of the medical risk can be better quantified and balanced than in a facial attack.

Id. at 1638–39 (citation omitted).

374. This comparison pits the strong argument, that partial-birth abortion is never the best alternative, against the assault weapon's objectively measurable SMUs and assault weapons bans' irrational attribution of dangerous qualities to features that only affect appearance.

375. 127 S. Ct. at 1639 (citation omitted).

376. *Id.*

377. *Id.*

invite the strong attitudinalist challenge of unprincipled capitulation to the conservative common view.

On the second, weaker standard, Justice Kennedy argues in *Gonzales* that respondents failed to demonstrate that the ban would be unconstitutional in a large fraction of relevant cases.[378] On that measure the assault weapons claim is dramatically stronger, and this underscores a distinction I have made throughout. The strongest arguments in favor of abortion (i.e., abortion as self-defense)[379] only cover a very narrow slice of all abortions (because most pregnancies do not threaten the life of the mother).[380] In contrast, nearly every assault weapons claim can fairly assert the right-bearer's entitlement to the SMUs necessary to defend life against wrongful aggressors. Here, the assault weapons claim is sufficiently distinct and compelling that the Court might consider the assault weapons question facially, without the criticism of unprincipled capitulation to the common view.

CONCLUSION

One can on a principled basis elevate the state's interest above the individual's interest on questions of self-defense and abortion. One can on a principled basis subordinate the state's interest in both. One can on a principled basis elevate the gun right but not the abortion right (because the competing life-interest in the abortion context is entirely innocent and in only a fraction of cases is the mother's life at stake, while the right-bearer's life is always at stake in the self-defense case). But a principled argument has yet to be made for elevating the abortion right but subordinating the gun right. Attitudinalists tell us it is folly to expect adherence to principle on such matters. If and when an assault weapons case reaches the Supreme Court, it will be an important test of whether the attitudinalists are correct.

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378. *Id.* ("We note that the statute here applies to all instances in which the doctor proposes to use the prohibited procedure, not merely those in which the woman suffers from medical complications.").

379. *See supra* Part III.A.

380. *See* Jeani Chang et al., *Pregnancy-Related Mortality Surveillance—United States, 1991–1999*, MMWR SURVEILLANCE SUMMARIES, Feb. 2003, at 1, *available at* http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5202a1.htm.

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EXHIBIT 49

NSSF® REPORT 2021 EDITION
FIREARMS RETAILER
SURVEY REPORT

SOUTHWICK ASSOCIATES

Conducted for the
National Shooting Sports Foundation®
by: Southwick Associates

NSSF
The Firearm Industry Trade Association

TABLE OF CONTENTS

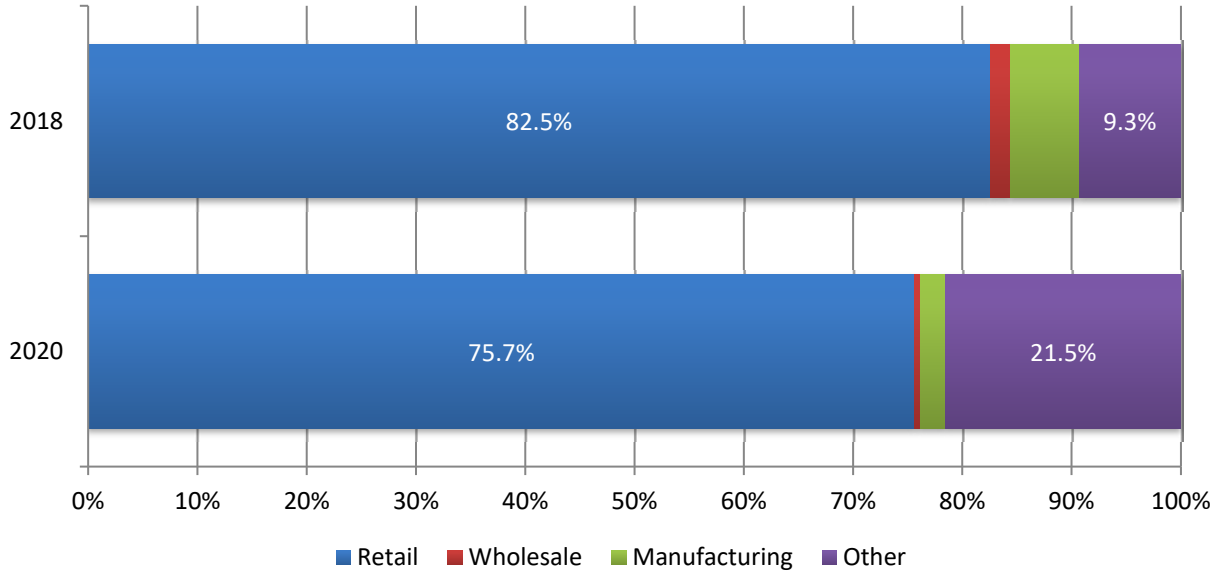
OVERVIEW

This report is the result of an in-depth analysis of the U.S. firearms retail industry sponsored by the National Shooting Sports Foundation. The information for the report was collected through an online survey of retailers that was conducted from February through March 2020. The survey respondents included 313 retail establishments located in 50 states. They range in size from single proprietors to large outdoor specialty retailers.

This report shows results for 2018 and 2020. Due to significant changes in survey design during 2020, several questions only show results for the most recent year. Results for 2019 are not available since the retailer survey was not conducted that year.

PRODUCTS SOLD

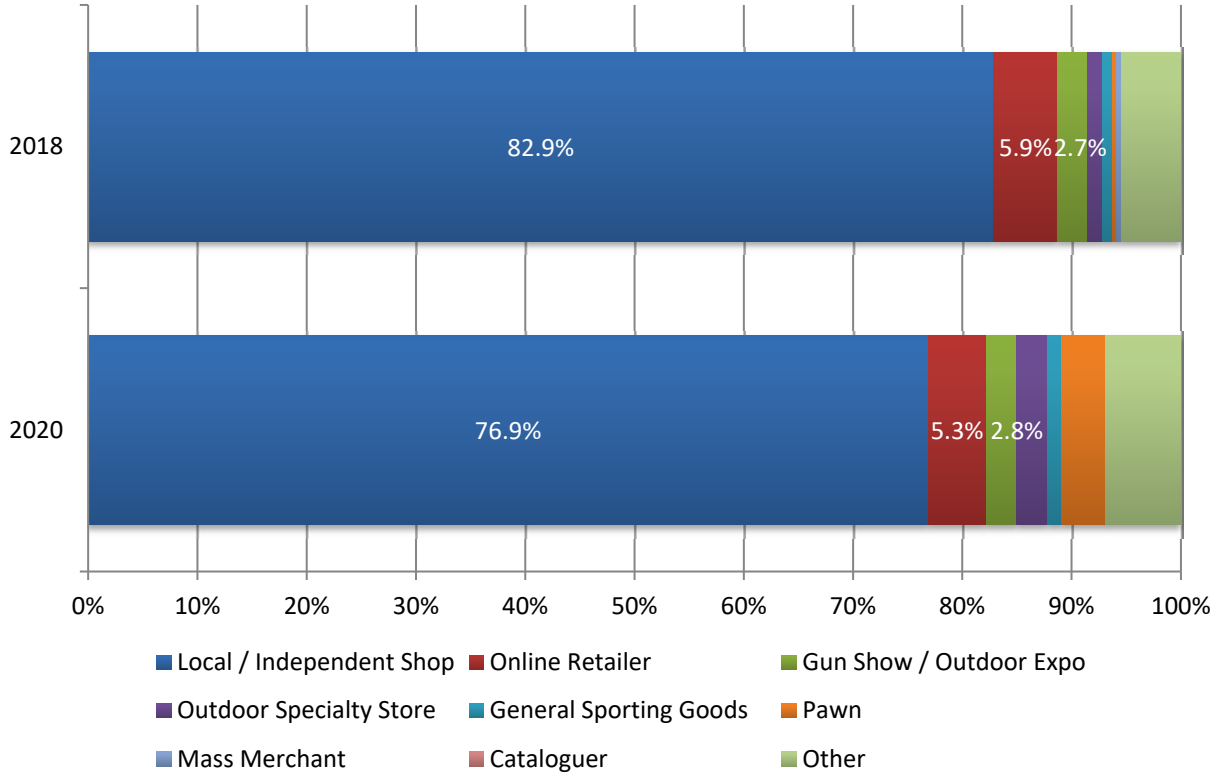
From which business activity does your business earn a majority of its annual revenues?



Total number of responses in 2020: n = 423

Of those that selected "Retail" as earning the majority of annual revenues:

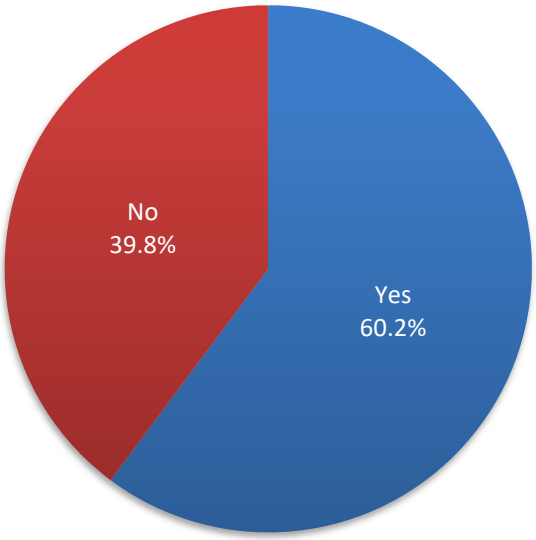
Please check the category that best describes your retail business:



	2018	2020	Responses (2020)
Local / Independent Shop	82.9%	76.9%	246
Online Retailer	5.9%	5.3%	17
Gun Show / Outdoor Expo	2.7%	2.8%	9
Outdoor Specialty Store	1.4%	2.8%	9
General Sporting Goods	0.9%	1.3%	4
Pawn	0.5%	4.1%	13
Mass Merchant	0.5%	0.0%	0
Cataloguer	0.0%	0.0%	0
Other	5.4%	6.9%	22
Total	**100%**	**100%**	**320**

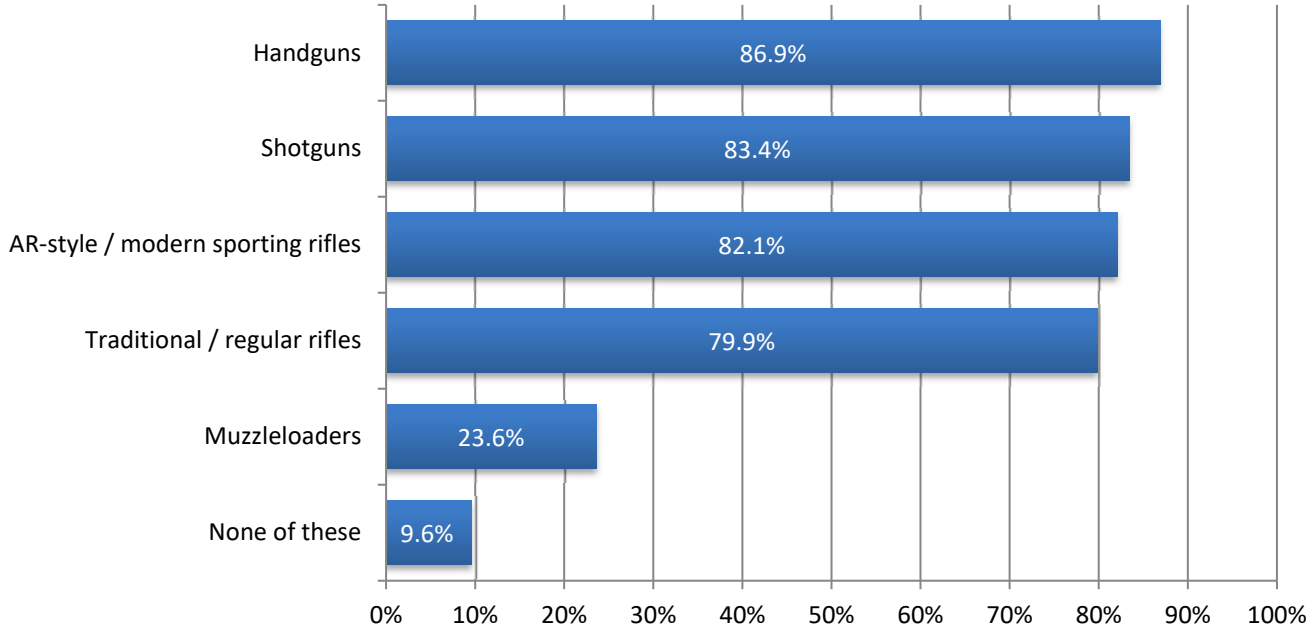
Of those that selected "Wholesale", "Manufacturing" or "Other" as earning the majority of annual revenues:

Do you earn any revenues from retail sales (sales directly to customers)?



	2020	Responses (2020)
Yes	60.2%	62
No	39.8%	41
Total	100%	103

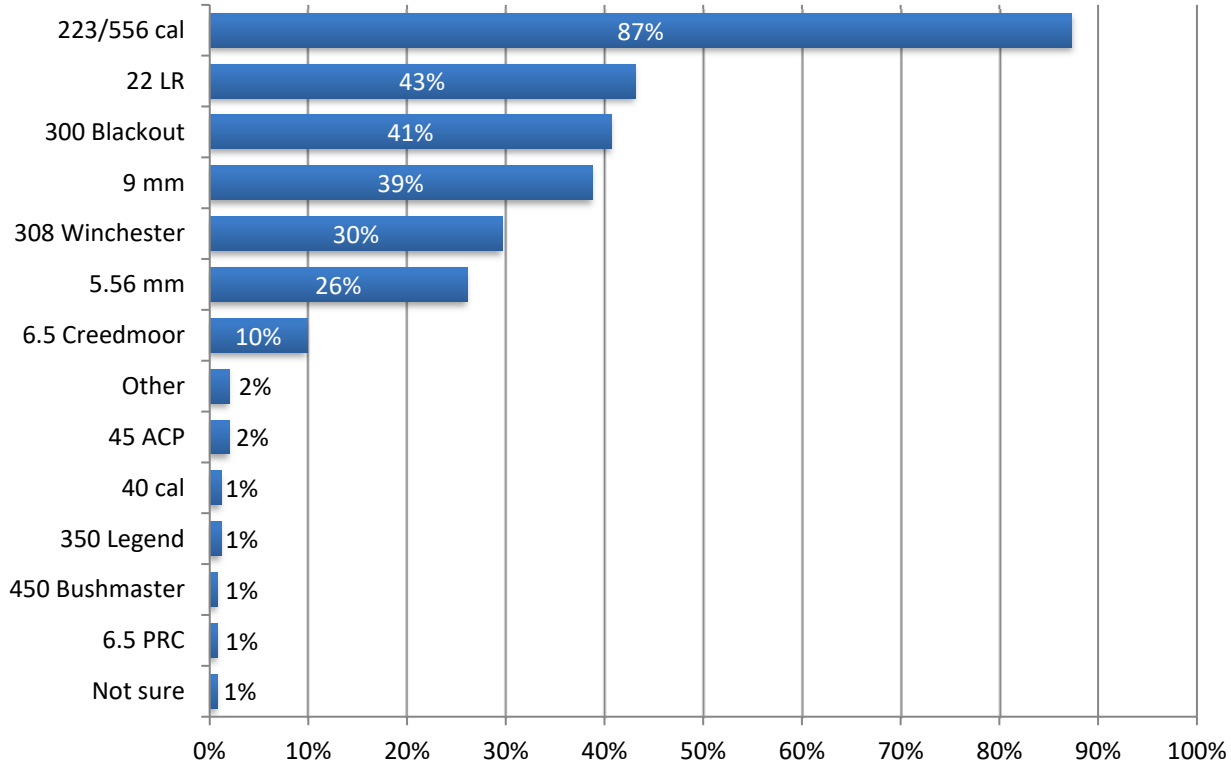
Which categories of NEW products do you currently sell retail?



	2020	Responses (2020)
Handguns	86.9%	272
Shotguns	83.4%	261
AR-style / modern sporting rifles	82.1%	257
Traditional rifles	79.9%	250
Muzzleloaders	23.6%	74
None of these	9.6%	30

Total number of responses for 2020: n = 313

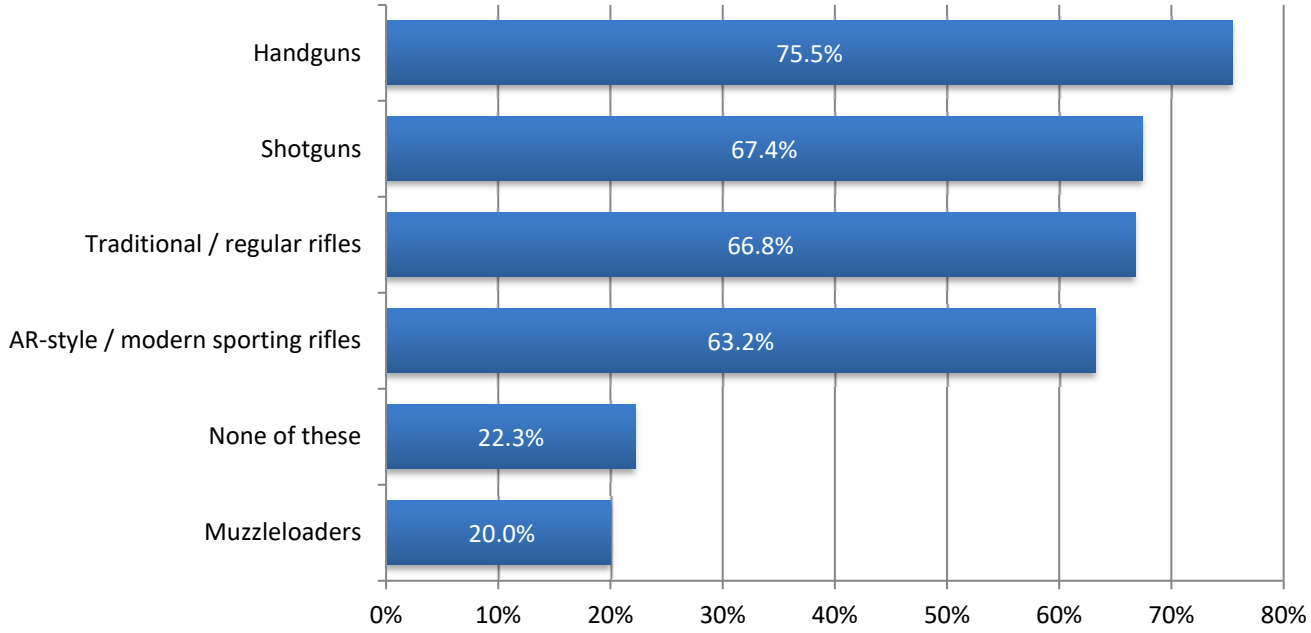
Please check the top three calibers sold for NEW modern sporting rifles:



	2020	Responses (2020)
223/556 cal	87%	221
22 LR	43%	109
300 Blackout	41%	103
9 mm	39%	98
308 Winchester	30%	75
5.56 mm	26%	66
6.5 Creedmoor	10%	25
45 ACP	2%	5
Other	2%	5
350 Legend	1%	3
40 cal	1%	3
450 Bushmaster	1%	2
6.5 PRC	1%	2
Not sure	1%	2
280 Ackley Improved	0%	1
458 Socom	0%	1
6 mm	0%	0

Total number of responses in 2020: n = 253

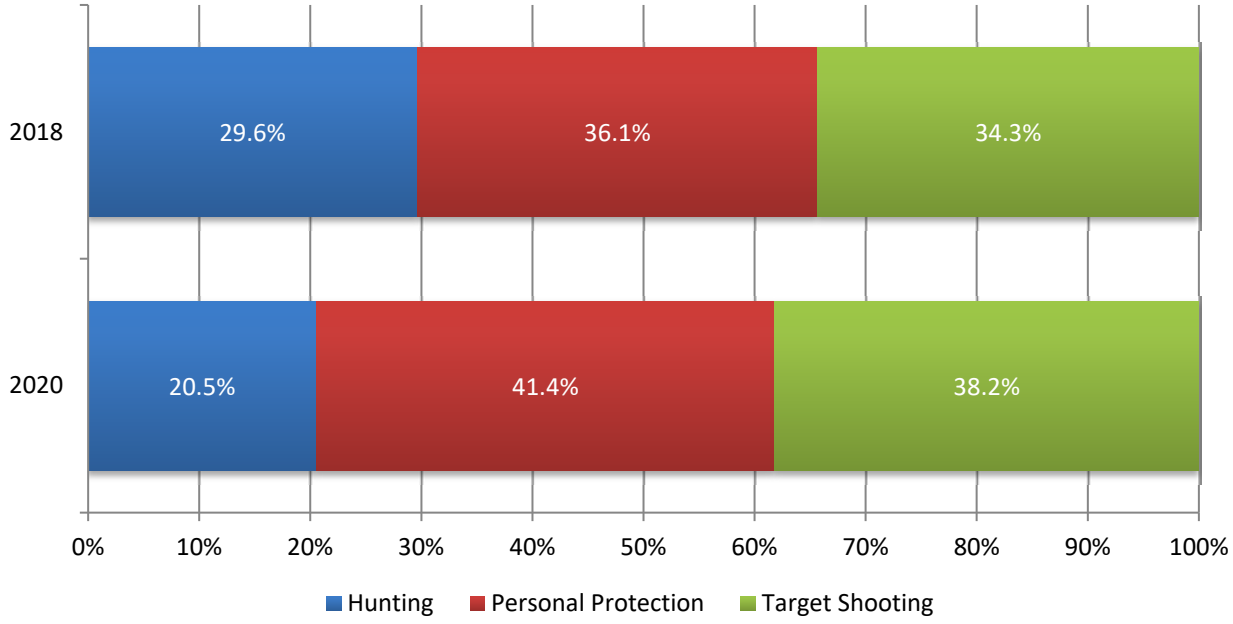
Which categories of USED products do you currently sell retail?



Number of responses selling at least one of these firearm types USED in 2020: n = 310

	2020	Responses (2020)
Handguns	75.5%	234
Shotguns	67.4%	209
Traditional rifles	66.8%	207
AR-style / modern sporting rifles	63.2%	196
None of these	22.3%	69
Muzzleloaders	20.0%	62

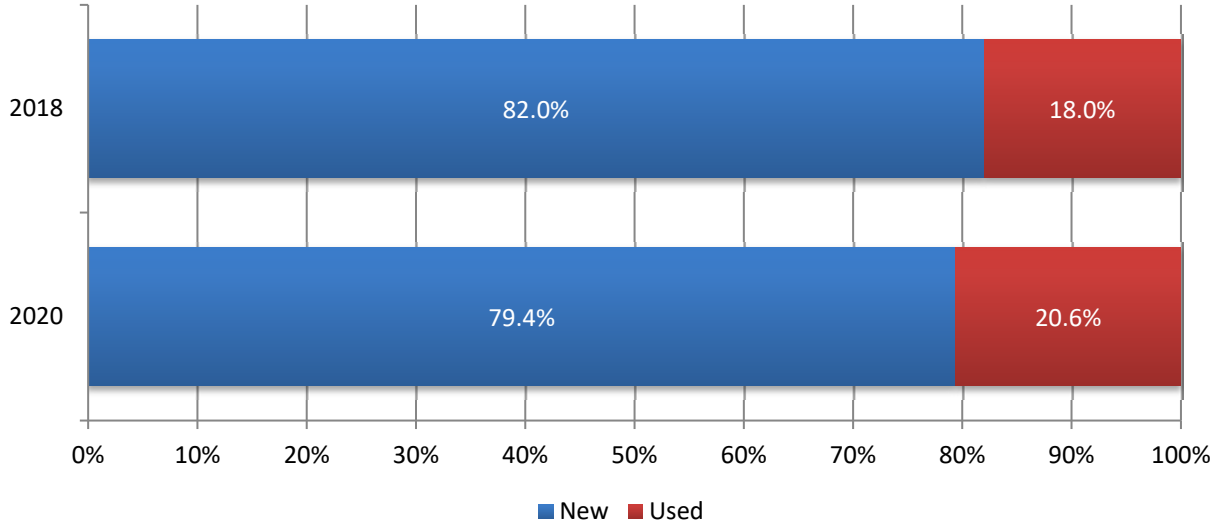
Of your annual AR-style/modern sporting rifle sales in 2020, please report the percentages you think were sold primarily for hunting purposes, target-shooting purposes and personal-protection purposes.



AR-style/modern sporting rifles	2018	2020
Hunting purposes	29.6%	20.5%
Personal-protection purposes	36.1%	41.4%
Target/informal shooting	34.3%	38.2%

Total number of responses in 2020: n = 244

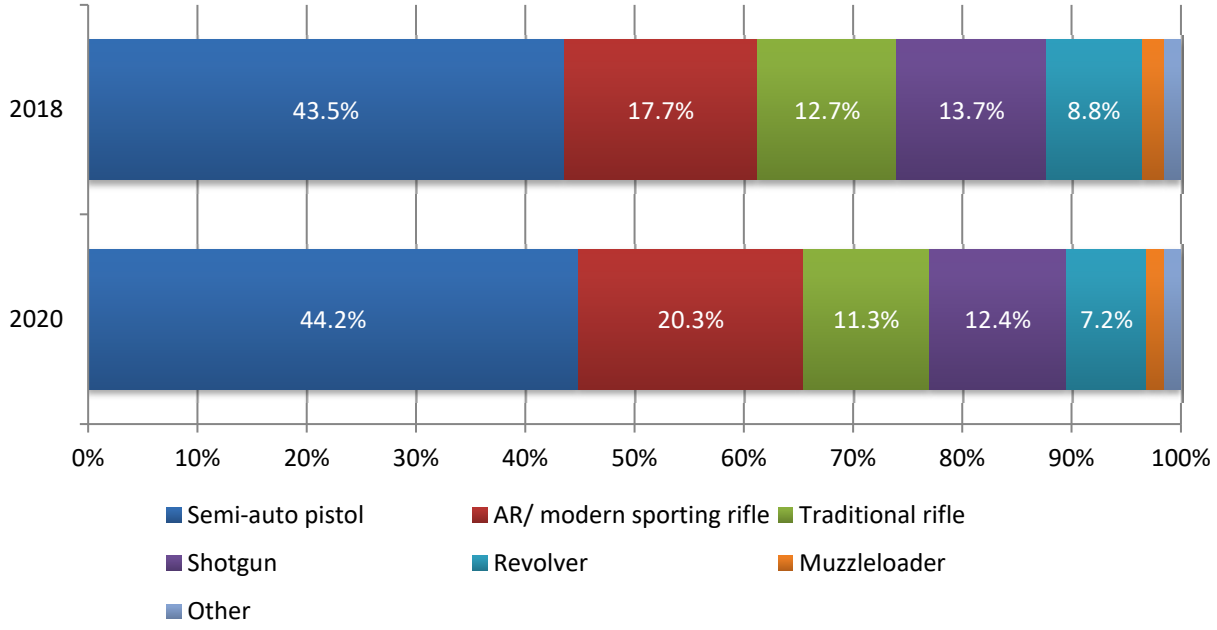
Approximately what percentage of the firearms you sold in 2020 were:



Firearms sold	2018	2020
New	82.0%	79.4%
Used	18.0%	20.6%

Total number of responses in 2020: n = 250

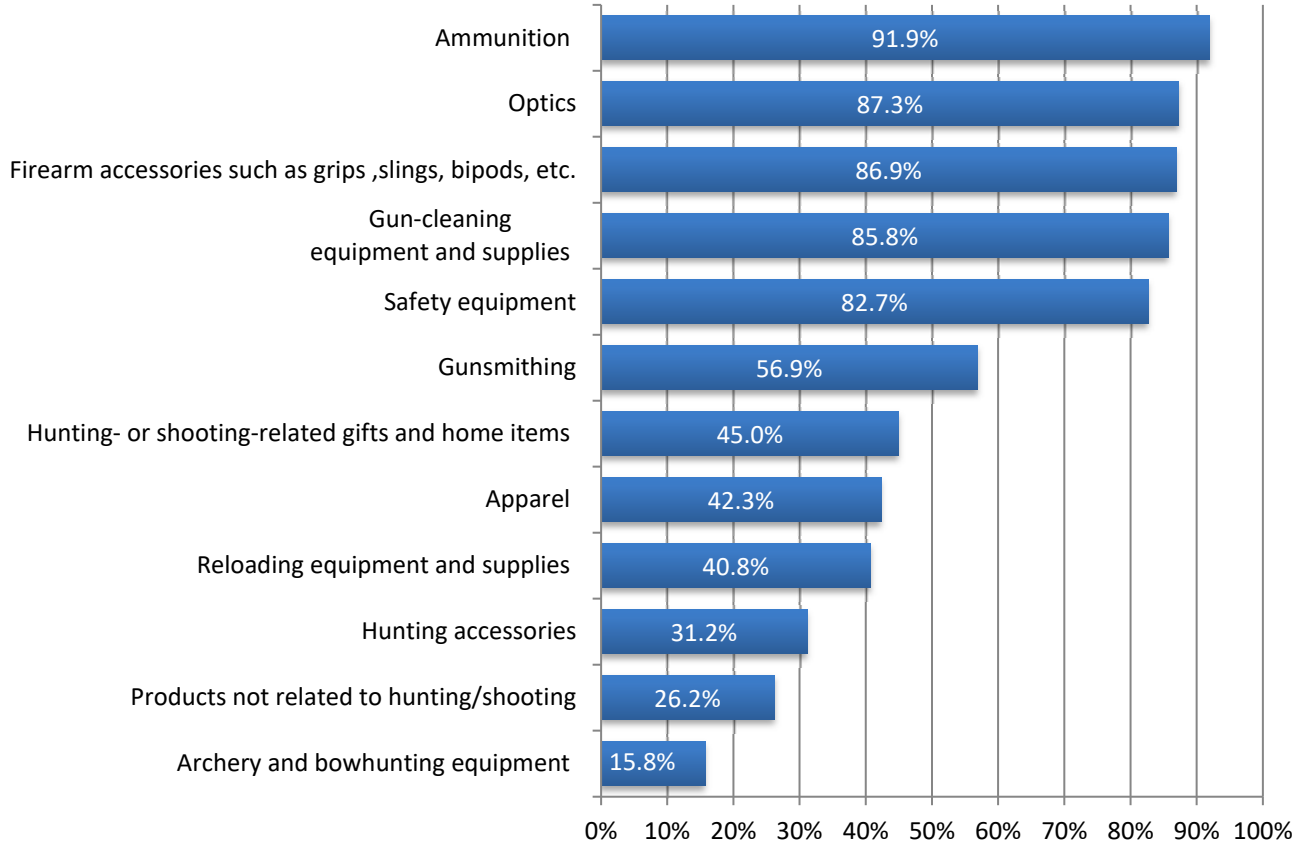
Approximately what percentage of the firearms you sold in 2020 were:



	2018	2020
Semi-auto pistol	43.5%	44.2%
AR/ modern sporting rifle	17.7%	20.3%
Traditional rifle	12.7%	11.3%
Shotgun	13.7%	12.4%
Revolver	8.8%	7.2%
Muzzleloader	2.0%	1.6%
Other	1.5%	1.5%

Total number of responses in 2020: n = 241

Which of these product categories do you currently sell?

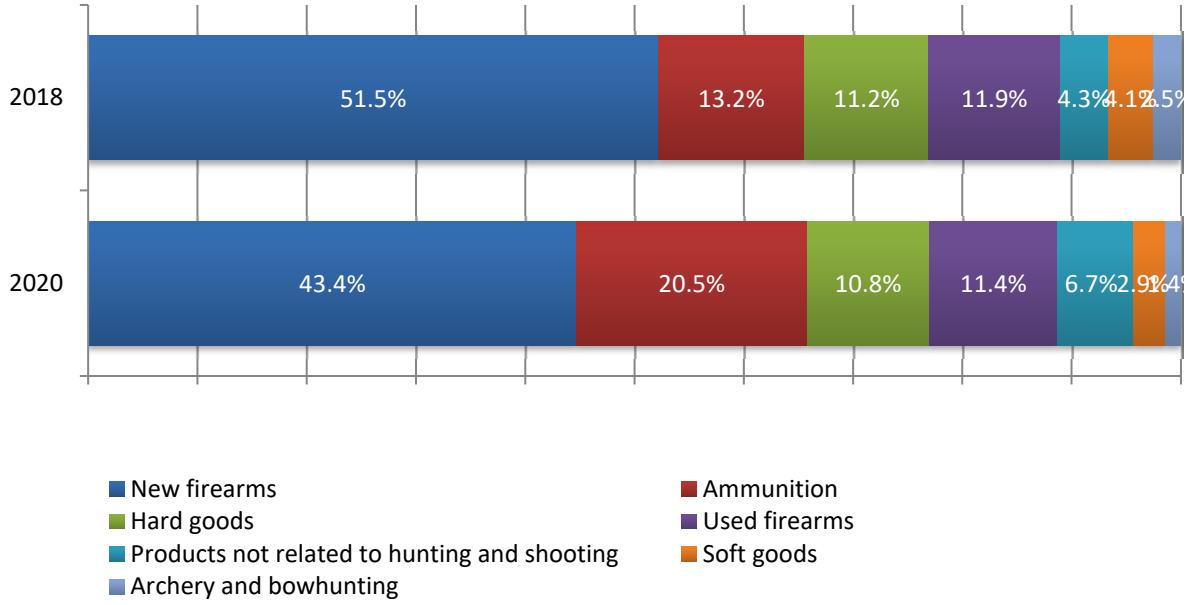


	2020	Responses (2020)
Ammunition	91.9%	239
Optics	87.3%	227
Firearm accessories such as grips, slings, bipods, etc.	86.9%	226
Gun-cleaning equipment and supplies	85.8%	223
Safety equipment	82.7%	215
Gunsmithing	56.9%	148
Hunting- or shooting-related gifts and home items	45.0%	117
Apparel	42.3%	110
Reloading equipment and supplies	40.8%	106
Hunting accessories	31.2%	81
Products not related to hunting/shooting	26.2%	68
Archery and bowhunting equipment	15.8%	41

Total number of responses in 2020: n = 260

SALES TRENDS

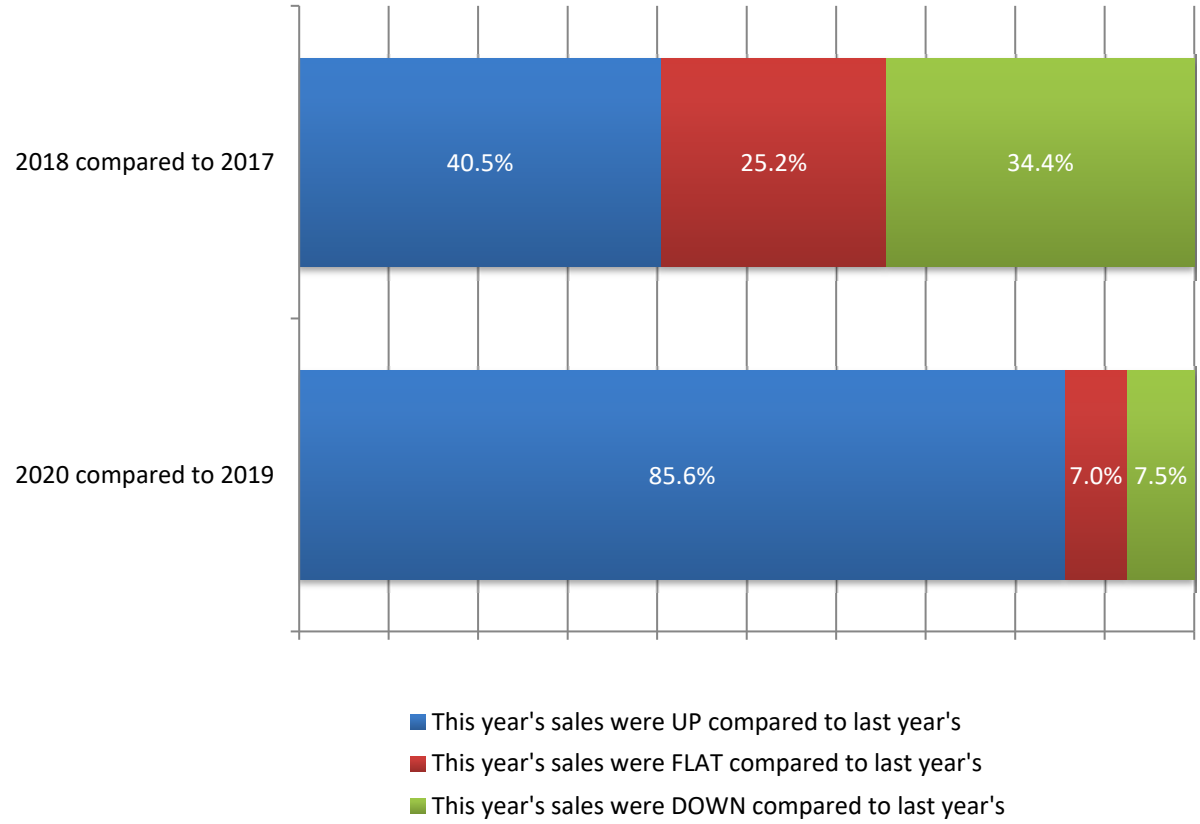
What percent of your gross annual sales were from the following categories?



	2018	2020
New firearms	51.5%	43.4%
Ammunition	13.2%	20.5%
Hard goods	11.2%	10.8%
Used firearms	11.9%	11.4%
Products not related to hunting and shooting	4.3%	6.7%
Soft goods	4.1%	2.9%
Archery and bowhunting	2.5%	1.4%

Total number of responses in 2020: n = 288

Total sales compared to the previous year:

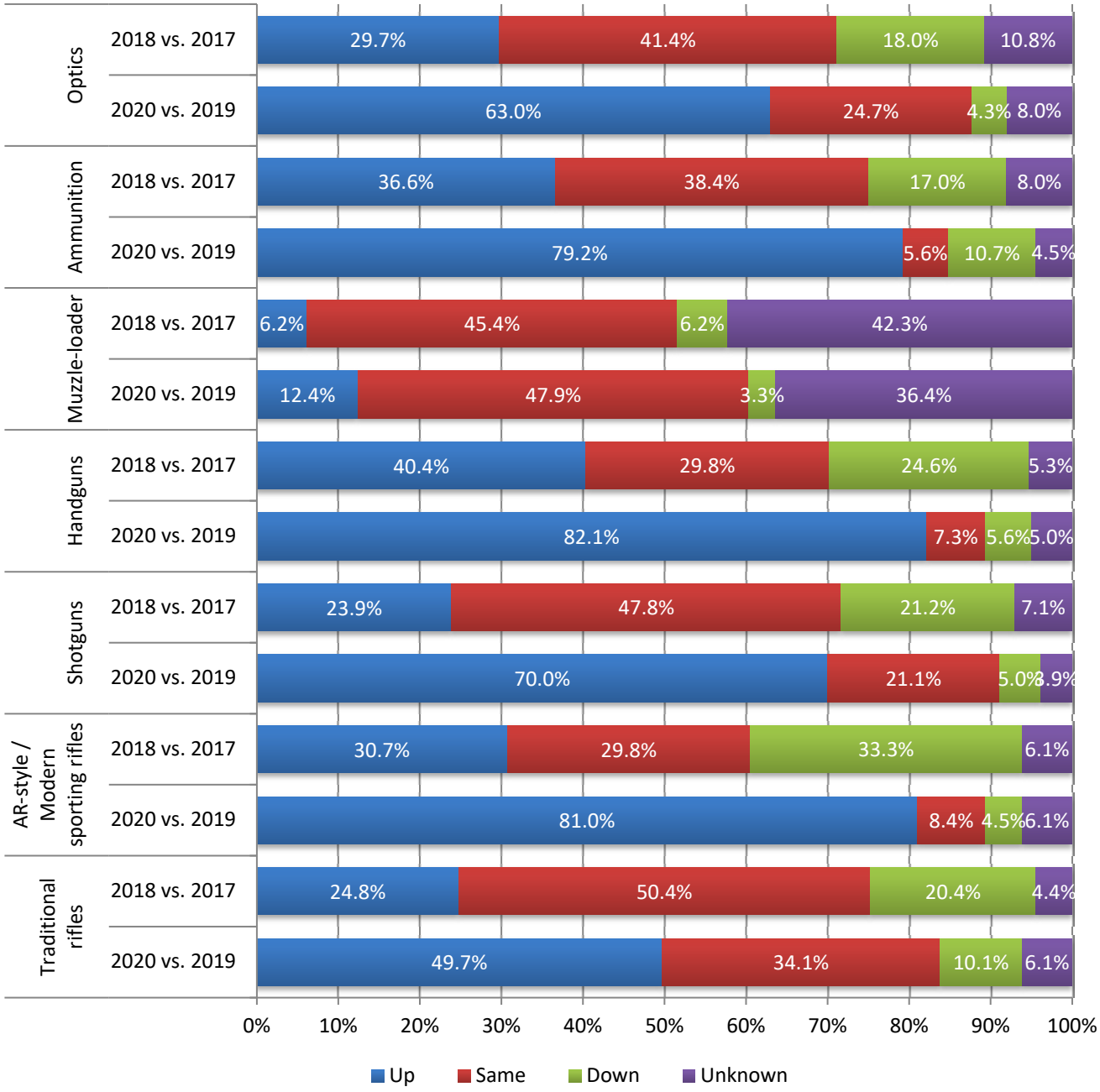


	2018	2020	Responses (2020)
Up	40.5%	85.6%	172
Flat	25.2%	7.0%	14
Down	34.4%	7.5%	15

What was the average change of total sales compared to the previous year?

	2018	2020	Responses (2020)
Avg. Increase	22.9%	80.8%	170
Avg. Decrease	18.2%	42.5%	15

Please compare your sales this year to your sales last year in the following categories listed below. For each category please say whether sales were UP or DOWN.

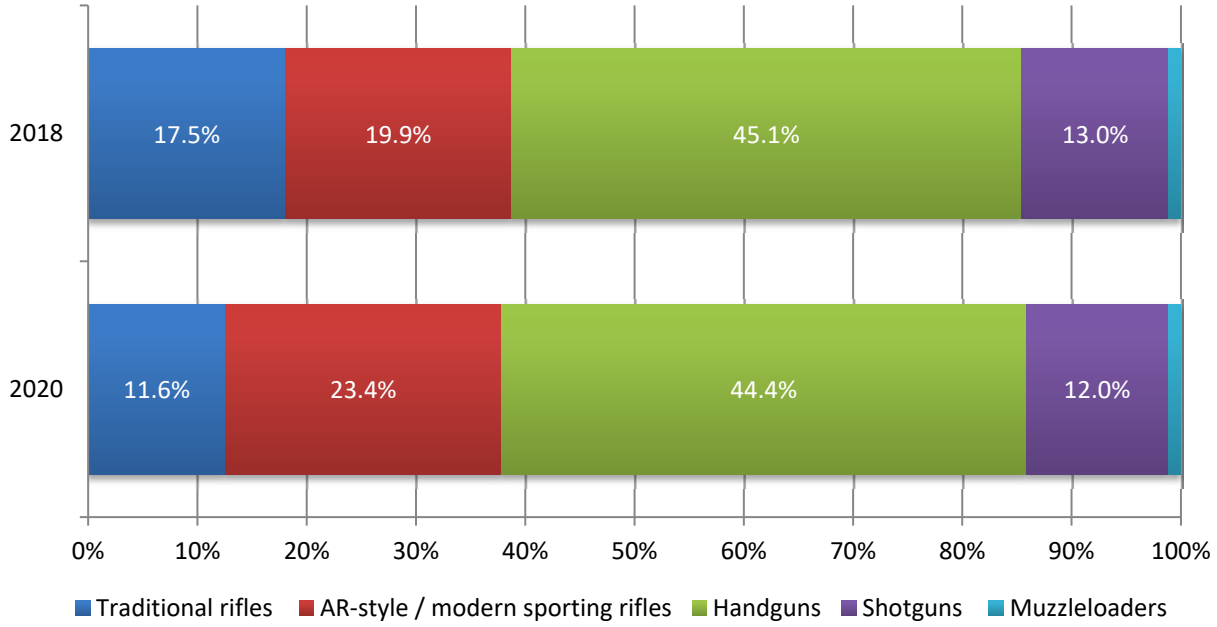


Total responses (year over year sales) in 2020: Optics (163); Ammunition (179); Muzzleloaders (122); Handguns (180); Shotguns (181); AR-Style rifles (180); Traditional rifles (180).

In 2020, what were your total sales of shooting and hunting-related items only, including firearms, ammo, accessories, apparel, etc.?

Year	Average Total Sales
2018	$1,252,011
2020	$2,666,719
# of 2020 Responses	170

Of all your FIREARM sales last year, please estimate the percentage of sales dollars attributable to each type of firearm:



Total responses in 2020: n = 194

SALES MARGINS and NET PROFIT

What is your average margin on the sale of NEW firearms?

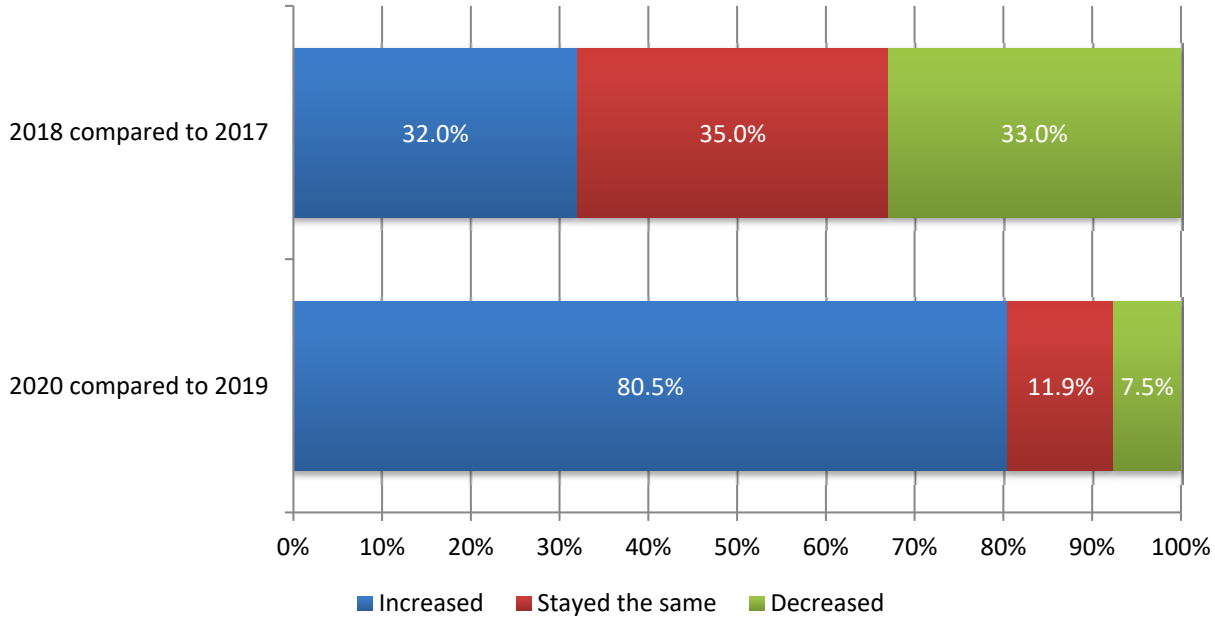
	2018	2020
NEW Firearms	15.8%	18.6%
Handguns	16.3%	20.2%
Rifles	16.8%	20.1%
Shotguns	16.4%	20.0%
Muzzleloaders	5.7%	12.6%

Total responses in 2020: n = 155

	2018	2020
Centerfire	24.1%	34.0%
Rimfire	21.4%	30.7%

Total responses in 2020: n = 156

Did your net profit increase, decrease or stay the same compared to the previous year?



Total number of responses in 2020: n = 159

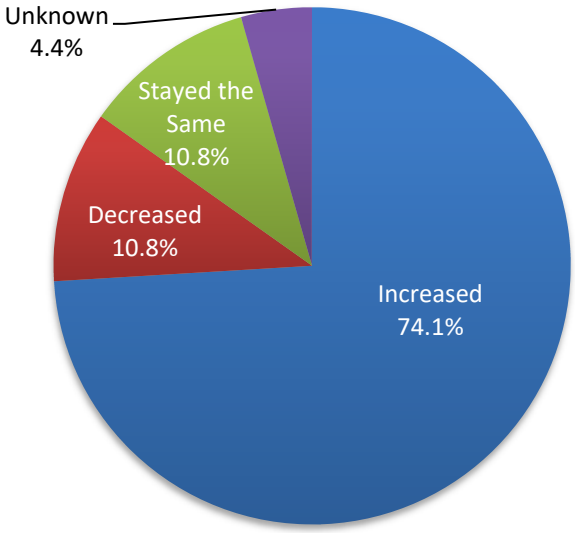
Estimated changes in net profit (for those who reported an increase or decrease).

	2018	2020	Responses (2020)
Average Increase	15.2%	70.2%	118
Average Decrease	38.9%	37.1%	12

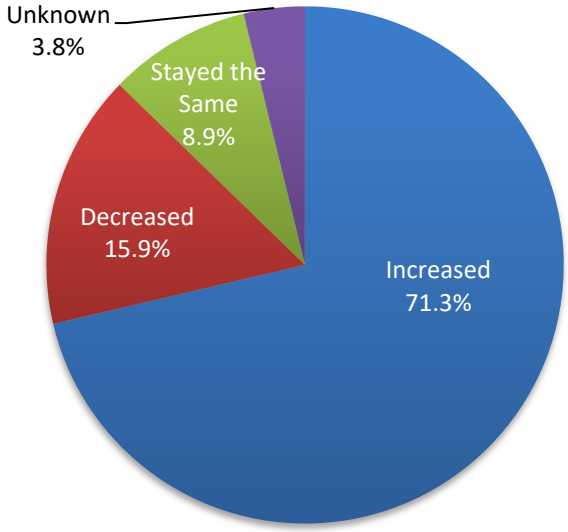
INVENTORY

How did your spending on inventory change in 2020 versus 2019 for:

Firearms



Ammunition



Product	Change in Spending on Inventory	2020
Firearms	Increased	74.1%
	Decreased	10.8%
	Stayed the Same	10.8%
	Unknown	4.4%
Ammunition	Increased	71.3%
	Decreased	15.9%
	Stayed the Same	8.9%
	Unknown	3.8%

Total number of respondents for FIREARMS (2020): n = 94
Total number of respondents for AMMUNITION (2020): n = 94

For 2020, what was the percentage change in your spending on inventory for each of the following items?

		2020	Responses (2020)
Firearms	Average Increase	93.3%	74
	Average Decrease	44.5%	7
Ammunition	Average Increase	121.3%	73
	Average Decrease	50.4%	8

SELECTED OPERATING MEASURES

NOTE: The following tables are based on a subset of respondents who provided complete information for sales, inventory, square footage, and cost of goods sold. Results are broken out into two categories: retailers with $1 million or more in total annual sales of shooting and hunting-related items only, and those with less than $1 million in sales.

What was the average value (replacement value, not retail value) of the total inventory you had on hand in 2020 for shooting- and hunting-related merchandise only, including firearms, ammo, accessories, apparel, etc.)? DO NOT include inventory for other activities such as fishing, hardware, camping, etc.

	2020	Responses (2020)
Retailers less than $1 million	$112,673.78	67
Retailers $1 million or more	$3,352,872.20	46

*Does not include inventory for other activities such as fishing, hardware, camping, etc.

To the best of your ability, please estimate the number of inventory turns you achieved in 2020:

	2020	Responses (2020)
Retailers less than $1 million	7.34	23
Retailers $1 million or more	7.56	33

*78 retailers were not able to answer this question.

What was the total square footage of retail space dedicated to shooting- and hunting-related items only, as of December 31?

	2018	2020	Responses (2020)
Retailers less than $1 million	1,116	2,087	71
Retailers $1 million or more	4,788	9,299	47

Please tell us how many full-time employees your store had in 2018 for hunting and shooting related merchandise including firearms, ammunition, etc.

	2018	2020	Responses (2020)
Retailers less than $1 million			
Full Time Employees	2.4	1.8	77
Part Time Employees	2.0	1.2	47
Retailers $1 million or more			
Full Time Employees	5.6	10.1	77
Part Time Employees	4.6	9.9	48

MARKETS and CUSTOMERS

What percentage of your shooting- and hunting-related sales revenue do you attribute to female customers?

	2018	2020
% of sales revenue	20.3%	28.0%

Total number of responses in 2020: n = 143

What type of firearm did female buyers purchase most often? (ranked from 1 (most likely) to 6 (least likely)

	2018	2020	Responses (2020)
Semi-automatic handgun	1.2	1.2	126
Revolver	2.4	2.4	110
AR platform (MSR) rifle	3.5	3.2	105
Shotgun	3.8	3.4	104
Traditional rifle	3.9	4.3	89
Muzzleloader	5.8	6.0	60

These results show how firearms retailers rank the observed preferences of female firearm buyers for given types of firearm on a scale of 1 (very likely) to 6 (not likely at all). For instance, the average respondent suggested that female hunters/shooters who purchased firearms from their business in 2020 most likely purchased a semi-automatic handgun (average rank of 1.2 out of 6) and was least likely to purchase a muzzleloader (average rank of 6 out of 6).

In your opinion, what percent of your customers were first-time gun buyers?

	2018	2020
% of all customers who were first time gun buyers	24.0%	34.0%

Total number of responses in 2020: n = 162

What type of firearm did first-time buyers purchase most often?

	2018	2020	Responses (2020)
Semi-automatic handgun	1.3	1.2	142
AR platform (MSR) rifle	2.9	2.5	128
Revolver	3.1	3.2	125
Shotgun	3.6	3.3	112
Traditional rifle	3.9	4.5	130
Muzzleloader	5.9	6.0	75

These results show how firearms retailers rank the observed preferences of first-time firearm buyers for given types of firearm on a scale of 1 (very likely) to 6 (not likely at all). For instance, the average respondent suggested that first time gun buyer who purchased firearms from their business in 2020 was more likely to purchase a revolver (average rank of 3.2 out of 6), than a traditional rifle (average rank of 4.5 out of 6).

To the best of your knowledge, what was your total customer demographic in 2020?

	2018	2020
Male	78.5%	73.8%
Female	21.5%	26.2%
White	74.4%	68.9%
Black	9.3%	12.9%
Hispanic	12.1%	10.6%
Asian	4.1%	3.9%
White Male	59.5%	51.6%
White Female	15.0%	17.4%
Black Male	7.0%	9.0%
Black Female	2.4%	3.9%
Hispanic Male	9.0%	7.9%
Hispanic Female	3.1%	2.7%
Asian Male	3.1%	2.6%
Asian Female	1.0%	1.2%
Other	NA	3.7%

Total number of responses in 2020: n = 140

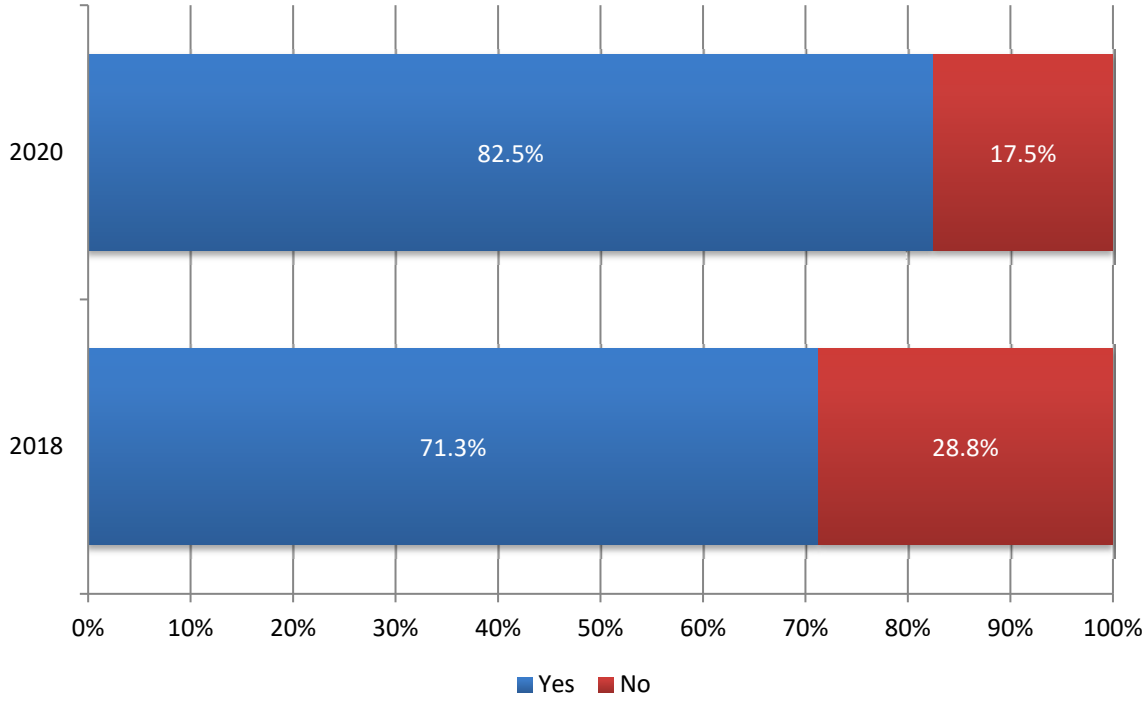
Do you have a system you use to collect demographic information (age, gender, race/ethnicity) on your customers?

	2018	2020
Yes	3.8%	8.6%
No	96.2%	91.4%

Total number of responses in 2020: n = 139

WEBSITE and ONLINE MARKETING

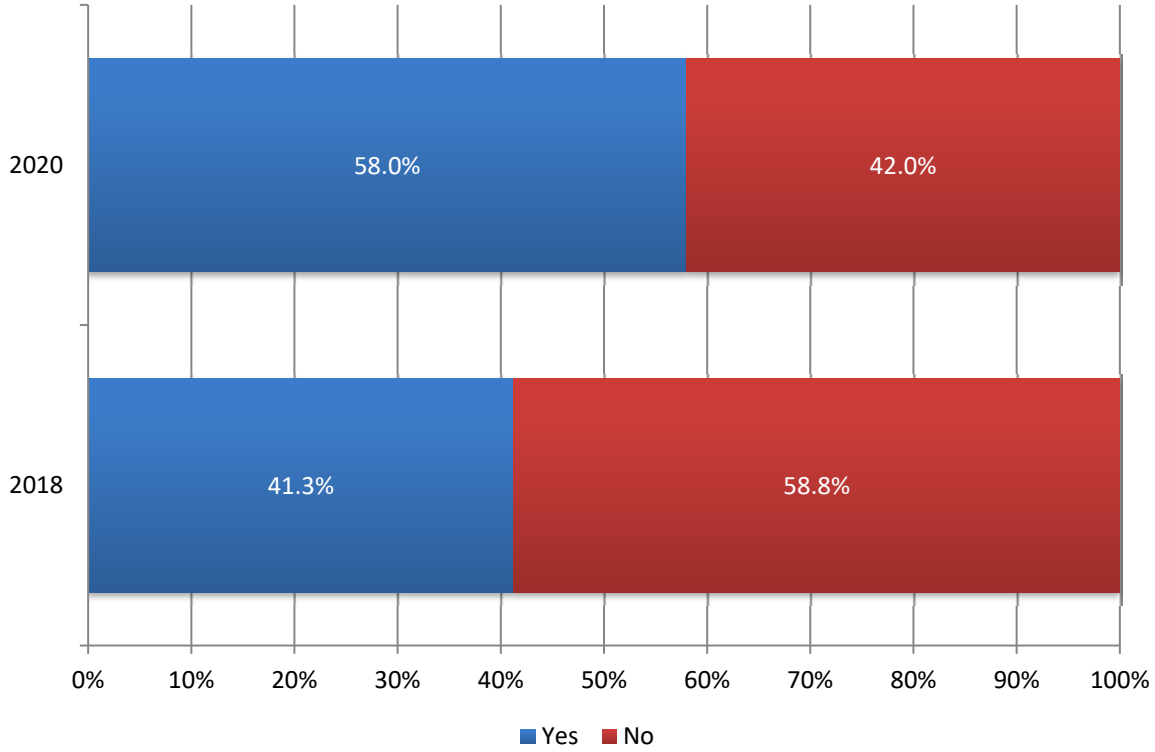
Does your business currently have a website?



	2020
Yes	82.5%
No	17.5%

Total number of responses in 2020: n = 143

Do you sell any hunting and shooting-related products via the Internet?



	2018	2020
Yes	41.3%	58.0%
No	58.8%	42.0%

Total number of responses in 2020: n = 143

This year, did your online sales increase or decrease?

	2018	2020
Increase	30.3%	69.9%
Stay the same	51.5%	18.1%
Decrease	18.2%	12.0%

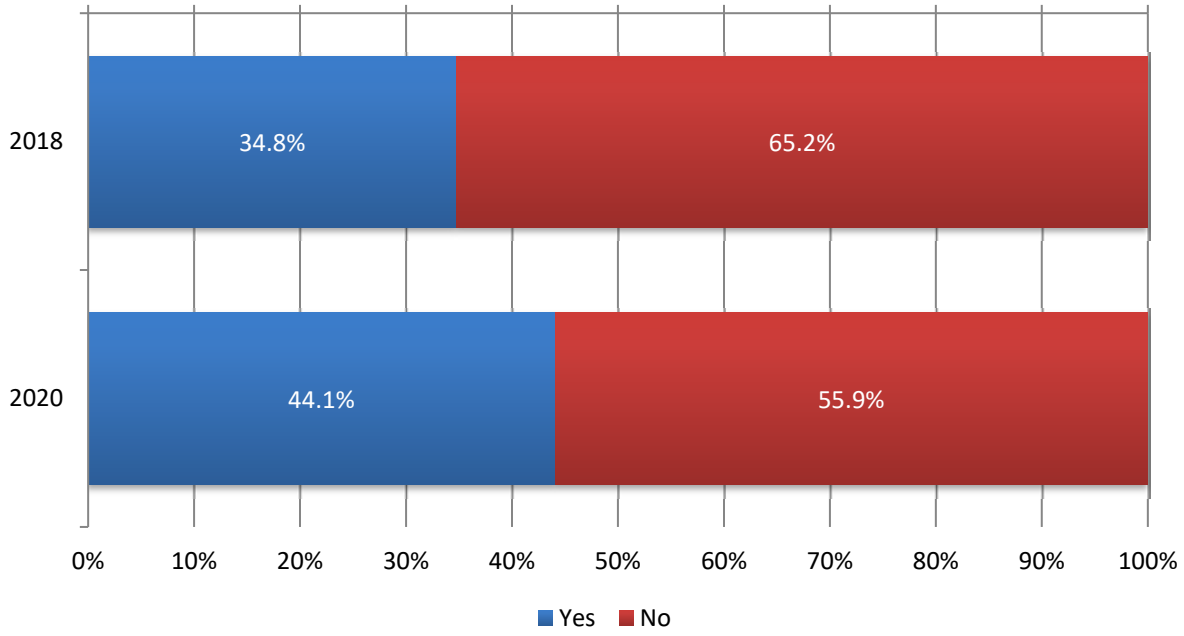
Total number of responses in 2020: n = 83

Please estimate as best as possible the percentage of annual shooting and hunting-related sales revenues that were generated online:

	2018	2020
% sales revenue generated online	26.0%	28.1%

Total number of responses in 2020: n = 78

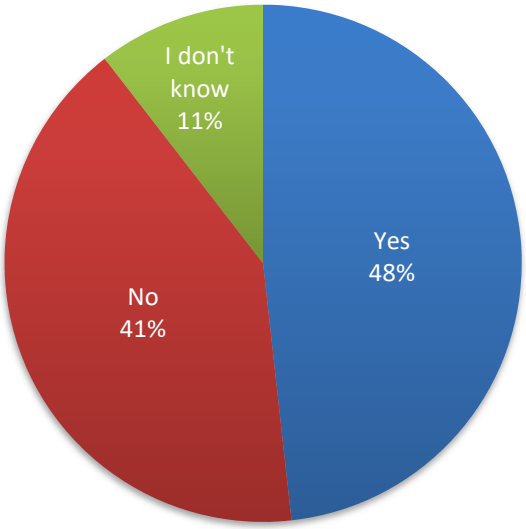
If you are not currently selling hunting and shooting products online, do your future business plans include selling online?



Total number of responses in 2020: n = 59

SOCIAL MEDIA AND CURRENT ISSUES

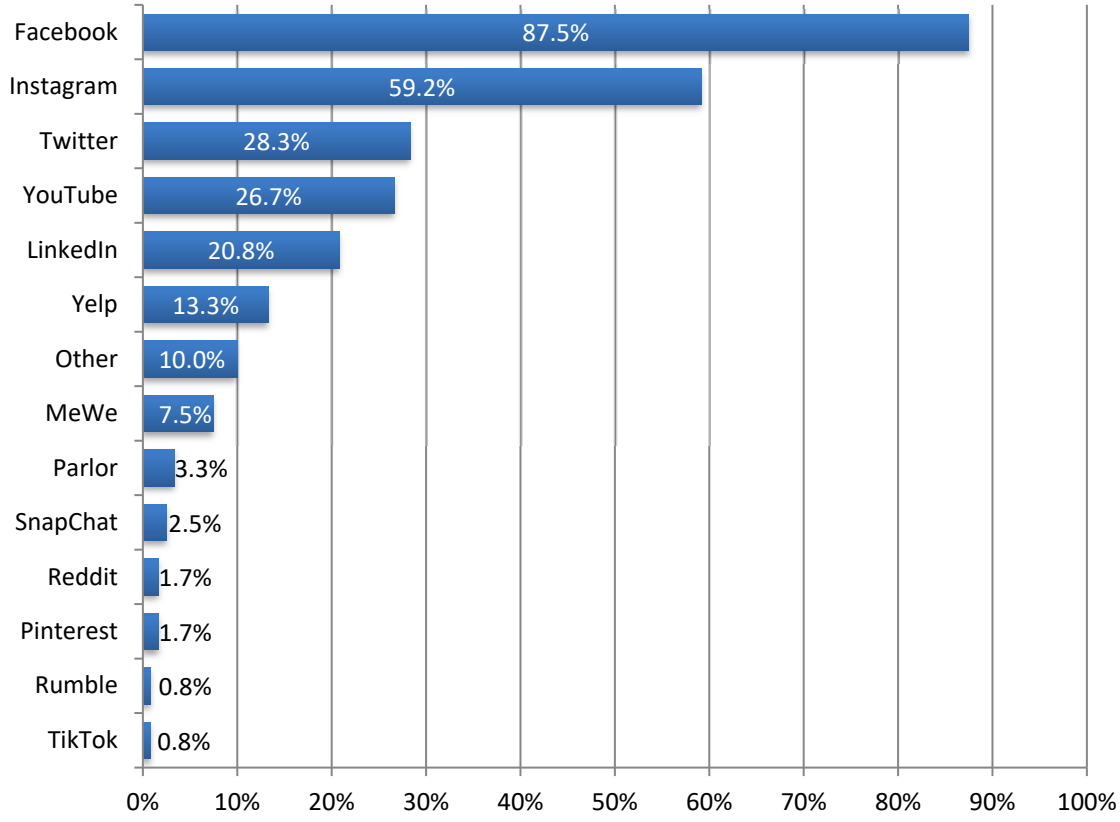
In 2020, were you denied the ability to advertise on any platforms?



	2020
Yes	48.3%
No	41.3%
I don’t know	10.5%

Total number of responses in 2020: n = 139

Which social media platforms does your store use to communicate with customers?

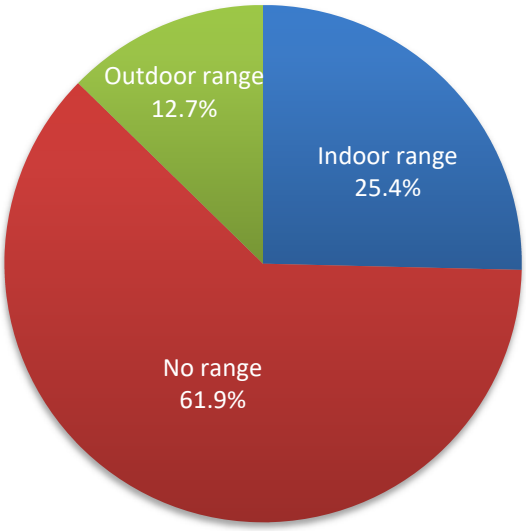


Social Media Platform	2020
Facebook	87.5%
Instagram	59.2%
Twitter	28.3%
YouTube	26.7%
LinkedIn	20.8%
Yelp	13.3%
Other	10.0%
MeWe	7.5%
Parlor	3.3%
Snapchat	2.5%
Pinterest	1.7%
Reddit	1.7%
TikTok	0.8%
Rumble	0.8%

Total number of responses in 2020: n = 120

SHOOTING RANGES AND OTHER OFFERINGS

Do you have an active shooting range on-site?



Total number of responses in 2020: n = 260

Do you offer any of the following general firearm instruction classes at your store? (select all that apply)

Class	2018	2020
Basic Pistol	36.6%	54.6%
Concealed Carry	39.8%	50.6%
Basic Rifle	23.6%	33.9%
Advanced Pistol Shooting	19.3%	33.5%
Women Only	20.5%	33.1%
Self-Defense	24.2%	31.5%
Basic Shotgun	21.1%	25.9%
Youth Classes	16.1%	25.9%
Tactical	14.3%	23.9%
Advanced Rifle Shooting	13.7%	20.3%
Hunter Education	11.8%	14.7%
Gunsmithing	9.9%	14.3%
Advanced Shotgun Shooting	8.7%	14.3%
Close Quarters Combat	3.7%	13.6%
Other	3.7%	7.6%
Reloading	5.0%	5.6%
We do not offer any firearm-related classes	49.1%	33.5%

Total number of responses in 2020: n = 251

BACKGROUND CHECKS AND OPERATING SYSTEMS

What percent of firearms sales (if any) in your store(s) use the approved alternate permits (such as concealed carry license) when completing a firearm sale? In other words, out of 100 firearms sold, what percent do not utilize the NICS system?

	2018	2020	Responses (2020)
Average response	38.4%	40.0%	117

Question shown only to respondents located in the following states: Alaska, Arizona, Arkansas, Georgia, Hawaii, Idaho, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Montana, Nebraska, Nevada, North Carolina, North Dakota, Ohio, South Carolina, South Dakota, Texas, Utah, Washington, West Virginia and Wyoming.

You are in a state that requires background checks on Private Party Transfers. Approximately what percent of total NICS background checks conducted by your store are for such Private Party Transfers?

	2020	Responses (2020)
Average response	11.2%	65

Question shown only to respondents located in the following states: California, Colorado Connecticut, Delaware, Illinois, Iowa, Maryland, Massachusetts, Michigan, Nebraska, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Washington and Washington D.C.

To the best of your recollection, on average how many firearms are sold per completed Form 4473?

	2018	2020	# 2020 Responses
Average number of firearms sold per completed form 4473	1.1	1.3	91

For example, in 2020 there were about 10 Form 4473s completed for every 13 firearms sold.

NSSF
The Firearm Industry Trade Association

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EXHIBIT 50

NEWS

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JULY 20, 2022

OMMONLY OWNED: NSSF ANNOUNCES OVER 24 MILLION MSRS IN IRCULATION

NEWTOWN, Conn. — NSSF®, the firearm industry trade association, updated the **industry estimate** of Modern Sporting Rifles (MSRs) in circulation in the United States to 24,446,000 since 1990. That is an increase of over 4.5 million rifles since the last estimate was released in 2020.

The estimate is derived from NSSF research, Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturing and Exportation Report (AFMER) and U.S. International Trade Commission (U.S. ITC) data, in cooperation with manufacturers, importers and exporters of MSRs, or AR-15 and AK-style rifles. This most recent estimate includes production

"This is a truly significant figure that demonstrates – again – the popularity of this commonly-owned style of rifle," said NSSF President and CEO Joe Bartozzi. "The firearm industry responds to market demand and this shows that during the elevated period of firearm sales that began in 2020, this particular style of rifle is the top choice for law-abiding citizens for hunting, recreational shooting and self-defense."

The MSR's **popularity** for lawful ownership is attributable to several factors, including accuracy, reliability, modularity and low recoil.

Year	exports of MSR/AR platform	US import less exports of MSR/AR, AK platform	ANNUAL TOTAL
1990	43,000	31,000	74,000
1991	46,000	69,000	115,000
1992	33,000	72,000	105,000
1993	62,000	226,000	288,000
1994	103,000	171,000	274,000
1995	54,000	77,000	131,000
1996	27,000	43,000	70,000
1997	44,000	81,000	125,000
1998	70,000	75,000	145,000
1999	113,000	119,000	232,000
2000	86,000	130,000	216,000
2001	60,000	119,000	179,000
2002	97,000	145,000	242,000
2003	118,000	262,000	380,000
2004	107,000	207,000	314,000
2005	141,000	170,000	311,000
2006	196,000	202,000	398,000
2007	269,000	229,000	

shooting ranges, sportsmen's organizations and publishers nationwide. For more information, visit nssf.org.

2012	1,308,000	322,000	1,630,000
2013	1,882,000	393,000	2,275,000
2014	950,000	237,000	1,187,000
2015	1,360,000	245,000	1,605,000
2016	2,217,000	230,000	2,447,000
2017	1,406,000	158,000	1,564,000
2018	1,731,000	225,000	1,956,000
2019	1,679,000	169,000	1,848,000
2020	2,466,000	332,000	2,798,000
TOTALS	18,901,000	5,545,000	24,446,000

Source: ATF AFMER, US ITC, Indus

Media contact:
Mark Oliva
202-220-1340

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